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(54) Title: ALBUMIN FUSION PROTEINS

(57) Abstract: The present invention encompasses albumin fusion proteins. Nucleic acid molecules encoding the albumin fusion proteins of the invention are also encompassed by the invention, as are vectors containing these nucleic acids, host cells transformed with these nucleic acids vectors, and methods of making the albumin fusion proteins of the invention and using these nucleic acids, vectors, and/or host cells. Additionally the present invention encompasses pharmaceutical compositions comprising albumin fusion proteins and methods of treating, preventing, or ameliorating diseases, disorders or conditions using albumin fusion proteins of the invention.



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## Albumin Fusion Proteins

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### BACKGROUND OF THE INVENTION

10       The invention relates generally to Therapeutic proteins (including, but not limited to, a polypeptide, antibody, or peptide, or fragments and variants thereof) fused to albumin or fragments or variants of albumin. The invention further relates to Therapeutic proteins (including, but not limited to, a polypeptide, antibody, or peptide, or fragments and variants thereof) fused to albumin or fragments or variants of albumin, that exhibit  
15       extended shelf-life and/or extended or therapeutic activity in solution. These fusion proteins are herein collectively referred to as "albumin fusion proteins of the invention." The invention encompasses therapeutic albumin fusion proteins, compositions, pharmaceutical compositions, formulations and kits. Nucleic acid molecules encoding the albumin fusion proteins of the invention are also encompassed by the invention, as are  
20       vectors containing these nucleic acids, host cells transformed with these nucleic acids vectors, and methods of making the albumin fusion proteins of the invention using these nucleic acids, vectors, and/or host cells.

      The invention is also directed to methods of *in vitro* stabilizing a Therapeutic protein via fusion or conjugation of the Therapeutic protein to albumin or fragments or  
25       variants of albumin.

      Human serum albumin (HSA, or HA), a protein of 585 amino acids in its mature form (as shown in Figure 15 or in SEQ ID NO:18), is responsible for a significant proportion of the osmotic pressure of serum and also functions as a carrier of endogenous and exogenous ligands. At present, HA for clinical use is produced by extraction from  
30       human blood. The production of recombinant HA (rHA) in microorganisms has been disclosed in EP 330 451 and EP 361 991.

      The role of albumin as a carrier molecule and its inert nature are desirable

properties for use as a carrier and transporter of polypeptides *in vivo*. The use of albumin as a component of an albumin fusion protein as a carrier for various proteins has been suggested in WO 93/15199, WO 93/15200, and EP 413 622. The use of N-terminal fragments of HA for fusions to polypeptides has also been proposed (EP 399 666). Fusion  
5 of albumin to the Therapeutic protein may be achieved by genetic manipulation, such that the DNA coding for HA, or a fragment thereof, is joined to the DNA coding for the Therapeutic protein. A suitable host is then transformed or transfected with the fused nucleotide sequences, so arranged on a suitable plasmid as to express a fusion polypeptide. The expression may be effected *in vitro* from, for example, prokaryotic or eukaryotic  
10 cells, or *in vivo e.g.* from a transgenic organism.

Therapeutic proteins in their native state or when recombinantly produced, such as interferons and growth hormones, are typically labile molecules exhibiting short shelf-lives, particularly when formulated in aqueous solutions. The instability in these molecules when formulated for administration dictates that many of the molecules must be  
15 lyophilized and refrigerated at all times during storage, thereby rendering the molecules difficult to transport and/or store. Storage problems are particularly acute when pharmaceutical formulations must be stored and dispensed outside of the hospital environment. Many protein and peptide drugs also require the addition of high concentrations of other protein such as albumin to reduce or prevent loss of protein due to  
20 binding to the container. This is a major concern with respect to proteins such as IFN. For this reason, many Therapeutic proteins are formulated in combination with large proportion of albumin carrier molecule (100-1000 fold excess), though this is an undesirable and expensive feature of the formulation.

Few practical solutions to the storage problems of labile protein molecules have  
25 been proposed. Accordingly, there is a need for stabilized, long lasting formulations of proteinaceous therapeutic molecules that are easily dispensed, preferably with a simple formulation requiring minimal post-storage manipulation.

#### SUMMARY OF THE INVENTION

30 The present invention is based, in part, on the discovery that Therapeutic proteins may be stabilized to extend the shelf-life, and/or to retain the Therapeutic protein's activity for extended periods of time in solution, *in vitro* and/or *in vivo*, by genetically or

chemically fusing or conjugating the Therapeutic protein to albumin or a fragment (portion) or variant of albumin, that is sufficient to stabilize the protein and/or its activity. In addition it has been determined that the use of albumin-fusion proteins or albumin conjugated proteins may reduce the need to formulate protein solutions with large excesses of carrier proteins (such as albumin, unfused) to prevent loss of Therapeutic proteins due to factors such as binding to the container.

The present invention encompasses albumin fusion proteins comprising a Therapeutic protein (e.g., a polypeptide, antibody, or peptide, or fragments and variants thereof) fused to albumin or a fragment (portion) or variant of albumin. The present invention also encompasses albumin fusion proteins comprising a Therapeutic protein (e.g., a polypeptide, antibody, or peptide, or fragments and variants thereof) fused to albumin or a fragment (portion) or variant of albumin, that is sufficient to prolong the shelf life of the Therapeutic protein, and/or stabilize the Therapeutic protein and/or its activity in solution (or in a pharmaceutical composition) *in vitro* and/or *in vivo*. Nucleic acid molecules encoding the albumin fusion proteins of the invention are also encompassed by the invention, as are vectors containing these nucleic acids, host cells transformed with these nucleic acids vectors, and methods of making the albumin fusion proteins of the invention and using these nucleic acids, vectors, and/or host cells.

The invention also encompasses pharmaceutical formulations comprising an albumin fusion protein of the invention and a pharmaceutically acceptable diluent or carrier. Such formulations may be in a kit or container. Such kit or container may be packaged with instructions pertaining to the extended shelf life of the Therapeutic protein. Such formulations may be used in methods of treating, preventing, ameliorating or diagnosing a disease or disease symptom in a patient, preferably a mammal, most preferably a human, comprising the step of administering the pharmaceutical formulation to the patient.

In other embodiments, the present invention encompasses methods of preventing treating, or ameliorating a disease or disorder. In preferred embodiments, the present invention encompasses a method of treating a disease or disorder listed in the "Preferred Indication Y" column of Table 1 comprising administering to a patient in which such treatment, prevention or amelioration is desired an albumin fusion protein of the invention that comprises a Therapeutic protein portion corresponding to a Therapeutic protein (or

fragment or variant thereof) disclosed in the "Therapeutic Protein X" column of Table 1 (in the same row as the disease or disorder to be treated is listed in the "Preferred Indication Y" column of Table 1) in an amount effective to treat prevent or ameliorate the disease or disorder.

5 In another embodiment, the invention includes a method of extending the shelf life of a Therapeutic protein (e.g., a polypeptide, antibody, or peptide, or fragments and variants thereof) comprising the step of fusing or conjugating the Therapeutic protein to albumin or a fragment (portion) or variant of albumin, that is sufficient to extend the shelf-life of the Therapeutic protein. In a preferred embodiment, the Therapeutic protein used  
10 according to this method is fused to the albumin, or the fragment or variant of albumin. In a most preferred embodiment, the Therapeutic protein used according to this method is fused to albumin, or a fragment or variant of albumin, via recombinant DNA technology or genetic engineering.

In another embodiment, the invention includes a method of stabilizing a  
15 Therapeutic protein (e.g., a polypeptide, antibody, or peptide, or fragments and variants thereof) in solution, comprising the step of fusing or conjugating the Therapeutic protein to albumin or a fragment (portion) or variant of albumin, that is sufficient to stabilize the Therapeutic protein. In a preferred embodiment, the Therapeutic protein used according to this method is fused to the albumin, or the fragment or variant of albumin. In a most  
20 preferred embodiment, the Therapeutic protein used according to this method is fused to albumin, or a fragment or variant of albumin, via recombinant DNA technology or genetic engineering.

The present invention further includes transgenic organisms modified to contain the nucleic acid molecules of the invention, preferably modified to express the albumin  
25 fusion proteins encoded by the nucleic acid molecules.

#### BRIEF DESCRIPTION OF THE FIGURES

Figure 1 depicts the extended shelf-life of an HA fusion protein in terms of the biological activity (Nb2 cell proliferation) of HA-hGH remaining after incubation in cell  
30 culture media for up to 5 weeks at 37°C. Under these conditions, hGH has no observed activity by week 2.

Figure 2 depicts the extended shelf-life of an HA fusion protein in terms of the

stable biological activity (Nb2 cell proliferation) of HA-hGH remaining after incubation in cell culture media for up to 3 weeks at 4, 37, or 50°C. Data is normalized to the biological activity of hGH at time zero.

Figures 3A and 3B compare the biological activity of HA-hGH with hGH in the Nb2 cell proliferation assay. Figure 3A shows proliferation after 24 hours of incubation with various concentrations of hGH or the albumin fusion protein, and Figure 3B shows proliferation after 48 hours of incubation with various concentrations of hGH or the albumin fusion protein.

Figure 4 shows a map of a plasmid (pPPC0005) that can be used as the base vector into which polynucleotides encoding the Therapeutic proteins (including polypeptide and fragments and variants thereof) may be cloned to form HA-fusions. Plasmid Map key: PRB1p: *PRB1 S. cerevisiae* promoter; FL: Fusion leader sequence; rHA: cDNA encoding HA; ADH1t: *ADH1 S. cerevisiae* terminator; T3: T3 sequencing primer site; T7: T7 sequencing primer site; Amp R:  $\beta$ -lactamase gene; ori: origin of replication. Please note that in the provisional applications to which this application claims priority, the plasmid in Figure 4 was labeled pPPC0006, instead of pPPC0005. In addition the drawing of this plasmid did not show certain pertinent restriction sites in this vector. Thus in the present application, the drawing is labeled pPPC0005 and more restriction sites of the same vector are shown.

Figure 5 compares the recovery of vial-stored HA-IFN solutions of various concentrations with a stock solution after 48 or 72 hours of storage.

Figure 6 compares the activity of an HA- $\alpha$ -IFN fusion protein after administration to monkeys via IV or SC.

Figure 7 describes the bioavailability and stability of an HA- $\alpha$ -IFN fusion protein.

Figure 8 is a map of an expression vector for the production of HA- $\alpha$ -IFN.

Figure 9 shows the location of loops in HA.

Figure 10 is an example of the modification of an HA loop.

Figure 11 is a representation of the HA loops.

Figure 12 shows the HA loop IV.

Figure 13 shows the tertiary structure of HA.

Figure 14 shows an example of a scFv-HA fusion

Figure 15 shows the amino acid sequence of the mature form of human albumin

(SEQ ID NO:18) and a polynucleotide encoding it (SEQ ID NO:17).

### DETAILED DESCRIPTION

As described above, the present invention is based, in part, on the discovery that a  
5 Therapeutic protein (e.g., a polypeptide, antibody, or peptide, or fragments and variants thereof) may be stabilized to extend the shelf-life and/or retain the Therapeutic protein's activity for extended periods of time in solution (or in a pharmaceutical composition) *in vitro* and/or *in vivo*, by genetically fusing or chemically conjugating the Therapeutic protein, polypeptide or peptide to all or a portion of albumin sufficient to stabilize the  
10 protein and its activity.

The present invention relates generally to albumin fusion proteins and methods of treating, preventing, or ameliorating diseases or disorders. As used herein, "albumin fusion protein" refers to a protein formed by the fusion of at least one molecule of albumin (or a fragment or variant thereof) to at least one molecule of a Therapeutic protein (or  
15 fragment or variant thereof). An albumin fusion protein of the invention comprises at least a fragment or variant of a Therapeutic protein and at least a fragment or variant of human serum albumin, which are associated with one another, preferably by genetic fusion (i.e., the albumin fusion protein is generated by translation of a nucleic acid in which a polynucleotide encoding all or a portion of a Therapeutic protein is joined in-frame with a  
20 polynucleotide encoding all or a portion of albumin) or chemical conjugation to one another. The Therapeutic protein and albumin protein, once part of the albumin fusion protein, may be referred to as a "portion", "region" or "moiety" of the albumin fusion protein (e.g., a "Therapeutic protein portion" or an "albumin protein portion").

In one embodiment, the invention provides an albumin fusion protein comprising,  
25 or alternatively consisting of, a Therapeutic protein (e.g., as described in Table 1) and a serum albumin protein. In other embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a biologically active and/or therapeutically active fragment of a Therapeutic protein and a serum albumin protein. In other embodiments, the invention provides an albumin fusion protein comprising, or  
30 alternatively consisting of, a biologically active and/or therapeutically active variant of a Therapeutic protein and a serum albumin protein. In preferred embodiments, the serum albumin protein component of the albumin fusion protein is the mature portion of serum

albumin.

In further embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a Therapeutic protein, and a biologically active and/or therapeutically active fragment of serum albumin. In further embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a Therapeutic protein and a biologically active and/or therapeutically active variant of serum albumin. In preferred embodiments, the Therapeutic protein portion of the albumin fusion protein is the mature portion of the Therapeutic protein. In a further preferred embodiment, the Therapeutic protein portion of the albumin fusion protein is the extracellular soluble domain of the Therapeutic protein. In an alternative embodiment, the Therapeutic protein portion of the albumin fusion protein is the active form of the Therapeutic protein.

In further embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a biologically active and/or therapeutically active fragment or variant of a Therapeutic protein and a biologically active and/or therapeutically active fragment or variant of serum albumin. In preferred embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, the mature portion of a Therapeutic protein and the mature portion of serum albumin.

### **Therapeutic proteins**

As stated above, an albumin fusion protein of the invention comprises at least a fragment or variant of a Therapeutic protein and at least a fragment or variant of human serum albumin, which are associated with one another, preferably by genetic fusion or chemical conjugation.

As used herein, "Therapeutic protein" refers to proteins, polypeptides, antibodies, peptides or fragments or variants thereof, having one or more therapeutic and/or biological activities. Therapeutic proteins encompassed by the invention include but are not limited to, proteins, polypeptides, peptides, antibodies, and biologics. (The terms peptides, proteins, and polypeptides are used interchangeably herein.) It is specifically contemplated that the term "Therapeutic protein" encompasses antibodies and fragments and variants thereof. Thus an albumin fusion protein of the invention may contain at least a fragment or variant of a Therapeutic protein, and/or at least a fragment or variant of an antibody.

Additionally, the term "Therapeutic protein" may refer to the endogenous or naturally occurring correlate of a Therapeutic protein.

By a polypeptide displaying a "therapeutic activity" or a protein that is "therapeutically active" is meant a polypeptide that possesses one or more known biological and/or therapeutic activities associated with a therapeutic protein such as one or more of the Therapeutic proteins described herein or otherwise known in the art. As a non-limiting example, a "Therapeutic protein" is a protein that is useful to treat, prevent or ameliorate a disease, condition or disorder. As a non-limiting example, a "Therapeutic protein" may be one that binds specifically to a particular cell type (normal (e.g., lymphocytes) or abnormal e.g., (cancer cells)) and therefore may be used to target a compound (drug, or cytotoxic agent) to that cell type specifically.

In another non-limiting example, a "Therapeutic protein" is a protein that has a biological activity, and in particular, a biological activity that is useful for treating preventing or ameliorating a disease. A non-inclusive list of biological activities that may be possessed by a Therapeutic protein includes, enhancing the immune response, promoting angiogenesis, inhibiting angiogenesis, regulating hematopoietic functions, stimulating nerve growth, enhancing an immune response, inhibiting an immune response, or any one or more of the biological activities described in the "Biological Activities" section below.

As used herein, "therapeutic activity" or "activity" may refer to an activity whose effect is consistent with a desirable therapeutic outcome in humans; or to desired effects in non-human mammals or in other species or organisms. Therapeutic activity may be measured *in vivo* or *in vitro*. For example, a desirable effect may be assayed in cell culture. As an example, when hGH is the Therapeutic protein, the effects of hGH on cell proliferation as described in Example 1 may be used as the endpoint for which therapeutic activity is measured. Such *in vitro* or cell culture assays are commonly available for many Therapeutic proteins as described in the art. Examples of assays include, but are not limited to those described herein in the Examples section or in the "Exemplary Activity Assay" column of Table 1.

Therapeutic proteins corresponding to a Therapeutic protein portion of an albumin fusion protein of the invention, such as cell surface and secretory proteins, are often modified by the attachment of one or more oligosaccharide groups. The modification,



referred to as glycosylation, can dramatically affect the physical properties of proteins and can be important in protein stability, secretion, and localization. Glycosylation occurs at specific locations along the polypeptide backbone. There are usually two major types of glycosylation: glycosylation characterized by O-linked oligosaccharides, which are  
5 attached to serine or threonine residues; and glycosylation characterized by N-linked oligosaccharides, which are attached to asparagine residues in an Asn-X-Ser/Thr sequence, where X can be any amino acid except proline. N-acetylneuramic acid (also known as sialic acid) is usually the terminal residue of both N-linked and O-linked oligosaccharides. Variables such as protein structure and cell type influence the number and nature of the  
10 carbohydrate units within the chains at different glycosylation sites. Glycosylation isomers are also common at the same site within a given cell type.

For example, several types of human interferon are glycosylated. Natural human interferon- $\alpha 2$  is O-glycosylated at threonine 106, and N-glycosylation occurs at asparagine 72 in interferon- $\alpha 14$  (Adolf *et al.*, J. Biochem 276:511 (1991); Nyman TA *et al.*, J.  
15 Biochem 329:295 (1998)). The oligosaccharides at asparagine 80 in natural interferon- $\beta 1\alpha$  may play an important factor in the solubility and stability of the protein, but may not be essential for its biological activity. This permits the production of an unglycosylated analog (interferon- $\beta 1b$ ) engineered with sequence modifications to enhance stability (Hosoi *et al.*, J. Interferon Res. 8:375 (1988; Karpusas *et al.*, Cell Mol Life Sci 54:1203  
20 (1998); Knight, J. Interferon Res. 2:421 (1982); Runkel *et al.*, Pharm Res 15:641 (1998); Lin, Dev. Biol. Stand. 96:97 (1998))1. Interferon- $\gamma$  contains two N-linked oligosaccharide chains at positions 25 and 97, both important for the efficient formation of the bioactive recombinant protein, and having an influence on the pharmacokinetic properties of the protein (Sareneva *et al.*, Eur. J. Biochem 242:191 (1996); Sareneva *et al.*, Biochem J.  
25 303:831 (1994); Sareneva *et al.*, J. Interferon Res. 13:267 (1993)). Mixed O-linked and N-linked glycosylation also occurs, for example in human erythropoietin, N-linked glycosylation occurs at asparagine residues located at positions 24, 38 and 83 while O-linked glycosylation occurs at a serine residue located at position 126 (Lai *et al.*, J. Biol. Chem. 261:3116 (1986); Broudy *et al.*, Arch. Biochem. Biophys. 265:329 (1988)).

30 Therapeutic proteins corresponding to a Therapeutic protein portion of an albumin fusion protein of the invention, as well as analogs and variants thereof, may be modified

so that glycosylation at one or more sites is altered as a result of manipulation(s) of their nucleic acid sequence, by the host cell in which they are expressed, or due to other conditions of their expression. For example, glycosylation isomers may be produced by abolishing or introducing glycosylation sites, *e.g.*, by substitution or deletion of amino acid residues, such as substitution of glutamine for asparagine, or unglycosylated recombinant proteins may be produced by expressing the proteins in host cells that will not glycosylate them, *e.g.* in *E. coli* or glycosylation-deficient yeast. These approaches are described in more detail below and are known in the art.

Therapeutic proteins (particularly those disclosed in Table 1) and their nucleic acid sequences are well known in the art and available in public databases such as Chemical Abstracts Services Databases (*e.g.*, the CAS Registry), GenBank, and GenSeq as shown in Table 1.

Additional Therapeutic proteins corresponding to a Therapeutic protein portion of an albumin fusion protein of the invention include, but are not limited to, one or more of the Therapeutic proteins or peptides disclosed in the "Therapeutic Protein X" column of Table 1, or fragment or variable thereof.

Table 1 provides a non-exhaustive list of Therapeutic proteins that correspond to a Therapeutic protein portion of an albumin fusion protein of the invention. The "Therapeutic Protein X" column discloses Therapeutic protein molecules followed by parentheses containing scientific and brand names that comprise, or alternatively consist of, that Therapeutic protein molecule or a fragment or variant thereof. "Therapeutic protein X" as used herein may refer either to an individual Therapeutic protein molecule (as defined by the amino acid sequence obtainable from the CAS and Genbank accession numbers), or to the entire group of Therapeutic proteins associated with a given Therapeutic protein molecule disclosed in this column. The "Exemplary Identifier" column provides Chemical Abstracts Services (CAS) Registry Numbers (published by the American Chemical Society) and/or Genbank Accession Numbers (*e.g.*, Locus ID, NP\_XXXXXX (Reference Sequence Protein), and XP\_XXXXXX (Model Protein) identifiers available through the national Center for Biotechnology Information (NCBI) webpage at [www.ncbi.nlm.nih.gov](http://www.ncbi.nlm.nih.gov)) that correspond to entries in the CAS Registry or Genbank database which contain an amino acid sequence of the Therapeutic Protein Molecule or of

a fragment or variant of the Therapeutic Protein Molecule. In addition GenSeq Accession numbers and/or journal publication citations are given to identify the exemplary amino acid sequence for some polypeptides. The summary pages associated with each of these CAS and Genbank and GenSeq Accession Numbers as well as the cited journal publications (e.g., PubMed ID number (PMID)) are each incorporated by reference in their entireties, particularly with respect to the amino acid sequences described therein. The "PCT/Patent Reference" column provides U.S. Patent numbers, or PCT International Publication Numbers corresponding to patents and/or published patent applications that describe the Therapeutic protein molecule. Each of the patents and/or published patent applications cited in the "PCT/Patent Reference" column are herein incorporated by reference in their entireties. In particular, the amino acid sequences of the specified polypeptide set forth in the sequence listing of each cited "PCT/Patent Reference", the variants of these amino acid sequences (mutations, fragments, etc.) set forth, for example, in the detailed description of each cited "PCT/Patent Reference", the therapeutic indications set forth, for example, in the detailed description of each cited "PCT/Patent Reference", and the activity assays for the specified polypeptide set forth in the detailed description, and more particularly, the examples of each cited "PCT/Patent Reference" are incorporated herein by reference. The "Biological activity" column describes Biological activities associated with the Therapeutic protein molecule. The "Exemplary Activity Assay" column provides references that describe assays which may be used to test the therapeutic and/or biological activity of a Therapeutic protein or an albumin fusion protein of the invention comprising a Therapeutic protein X portion. Each of the references cited in the "Exemplary Activity Assay" column are herein incorporated by reference in their entireties, particularly with respect to the description of the respective activity assay described in the reference (see Methods section, for example), for assaying the corresponding biological activity set forth in the "Biological Activity" column of Table 1. The "Preferred Indication Y" column describes disease, disorders, and/or conditions that may be treated, prevented, diagnosed, or ameliorated by Therapeutic protein X or an albumin fusion protein of the invention comprising a Therapeutic protein X portion.

The recitation of "Cancer" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent,

and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., leukemias, cancers, and/or as described below under "Hyperproliferative Disorders").

In specific embodiments, a Therapeutic protein having a "Cancer" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a  
5 Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a neoplasm located in a tissue selected from the group consisting of: colon, abdomen, bone, breast, digestive system, liver, pancreas, prostate, peritoneum, lung, blood (e.g., leukemia), endocrine glands (adrenal, parathyroid, pituitary, testicles, ovary, thymus, thyroid), uterus,  
10 eye, head and neck, nervous (central and peripheral), lymphatic system, pelvic, skin, soft tissue, spleen, thoracic, and urogenital.

In specific embodiments, a Therapeutic protein having a "Cancer" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a  
15 Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a pre-neoplastic condition, selected from the group consisting of: hyperplasia (e.g., endometrial hyperplasia and/or as described in the section entitled "Hyperproliferative Disorders"), metaplasia (e.g., connective tissue metaplasia, atypical metaplasia, and/or as described in the section entitled "Hyperproliferative Disorders"), and/or dysplasia (e.g.,  
20 cervical dysplasia, and bronchopulmonary dysplasia).

In another specific embodiment, a Therapeutic protein having a "Cancer" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a  
25 benign dysproliferative disorder selected from the group consisting of: benign tumors, fibrocystic conditions, tissue hypertrophy, and/or as described in the section entitled "Hyperproliferative Disorders".

The recitation of "Immune/Hematopoietic" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the  
30 Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), blood disorders

(e.g., as described below under "Immune Activity" "Cardiovascular Disorders" and/or "Blood-Related Disorders"), and infections (e.g., as described below under "Infectious Disease").

In specific embodiments, a Therapeutic protein having a "Immune/Hematopoietic" recitation in the "Preferred Indication" column of Table 1, a fusion protein containing this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, non-Hodgkin's lymphoma, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, asthma, AIDS, autoimmune disease, rheumatoid arthritis, granulomatous disease, immune deficiency, inflammatory bowel disease, sepsis, neutropenia, neutrophilia, psoriasis, immune reactions to transplanted organs and tissues, systemic lupus erythematosus, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and allergies.

The recitation of "Reproductive" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the reproductive system (e.g., as described below under "Reproductive System Disorders").

In specific embodiments, a Therapeutic protein having a "Reproductive" recitation in the "Preferred Indication" column of Table 1, a fusion protein containing this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cryptorchism, prostatitis, inguinal hernia, varicocele, leydig cell tumors, verrucous carcinoma, prostatitis, malacoplakia, Peyronie's disease, penile carcinoma, squamous cell hyperplasia, dysmenorrhea, ovarian adenocarcinoma, Turner's syndrome, mucopurulent cervicitis, Sertoli-leydig tumors, ovarian cancer, uterine cancer, pelvic inflammatory disease, testicular cancer, prostate cancer, Klinefelter's syndrome, Young's syndrome, premature ejaculation, diabetes mellitus, cystic fibrosis, Kartagener's syndrome, testicular atrophy, testicular feminization, anorchia, ectopic testis, epididymitis, orchitis, gonorrhea, syphilis, testicular torsion, vasitis nodosa, germ cell tumors, stromal

tumors, dysmenorrhea, retroverted uterus, endometriosis, fibroids, adenomyosis, anovulatory bleeding, amenorrhea, Cushing's syndrome, hydatidiform moles, Asherman's syndrome, premature menopause, precocious puberty, uterine polyps, dysfunctional uterine bleeding, cervicitis, chronic cervicitis, mucopurulent cervicitis, cervical dysplasia, cervical polyps, Nabothian cysts, cervical erosion, cervical incompetence, cervical neoplasms, pseudohermaphroditism, and premenstrual syndrome.

The recitation of "Musculoskeletal" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the immune system (e.g., as described below under "Immune Activity").

In specific embodiments, a Therapeutic protein having a "Musculoskeletal" recitation in the "Preferred Indication" column of Table 1, a fusion protein containing this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: bone cancers (e.g., osteochondromas, benign chondromas, chondroblastoma, chondromyxoid fibromas, osteoid osteomas, giant cell tumors, multiple myeloma, osteosarcomas), Paget's Disease, rheumatoid arthritis, systemic lupus erythematosus, osteomyelitis, Lyme Disease, gout, bursitis, tendonitis, osteoporosis, osteoarthritis, muscular dystrophy, mitochondrial myopathy, cachexia, and multiple sclerosis.

The recitation of "Cardiovascular" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), and disorders of the cardiovascular system (e.g., as described below under "Cardiovascular Disorders").

In specific embodiments, a Therapeutic protein having a "Cardiovascular" recitation in the "Preferred Indication" column of Table 1, a fusion protein containing this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: myxomas, fibromas, rhabdomyomas, cardiovascular abnormalities (e.g.,

congenital heart defects, cerebral arteriovenous malformations, septal defects), heart disease (e.g., heart failure, congestive heart disease, arrhythmia, tachycardia, fibrillation, pericardial Disease, endocarditis), cardiac arrest, heart valve disease (e.g., stenosis, regurgitation, prolapse), vascular disease (e.g., hypertension, coronary artery disease, angina, aneurysm, arteriosclerosis, peripheral vascular disease), hyponatremia, 5 hypernatremia, hypokalemia, and hyperkalemia.

The recitation of "Mixed Fetal" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, 10 and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders").

In specific embodiments, a Therapeutic protein having a "Mixed Fetal" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and 15 variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: spina bifida, hydranencephaly, neurofibromatosis, fetal alcohol syndrome, diabetes mellitus, PKU, Down's syndrome, Patau syndrome, Edwards syndrome, Turner syndrome, Apert syndrome, Carpenter syndrome, Conradi syndrome, Crouzon syndrome, cutis laxa, Cornelia de Lange syndrome, Ellis-van Creveld syndrome, Holt-Oram syndrome, Kartagener syndrome, 20 Meckel-Gruber syndrome, Noonan syndrome, Pallister-Hall syndrome, Rubinstein-Taybi syndrome, Scimitar syndrome, Smith-Lemli-Opitz syndrome, thrombocytopenia-absent radius (TAR) syndrome, Treacher Collins syndrome, Williams syndrome, Hirschsprung's disease, Meckel's diverticulum, polycystic kidney disease, Turner's syndrome, and gonadal dysgenesis, Klippel-Feil syndrome, Ostogenesis imperfecta, muscular dystrophy, 25 Tay-Sachs disease, Wilm's tumor, neuroblastoma, and retinoblastoma.

The recitation of "Excretory" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, 30 and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and renal disorders (e.g., as described below under "Renal Disorders").

In specific embodiments, a Therapeutic protein having a "Excretory" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: bladder cancer, prostate cancer, benign prostatic hyperplasia, bladder disorders (e.g., urinary incontinence, urinary retention, urinary obstruction, urinary tract Infections, interstitial cystitis, prostatitis, neurogenic bladder, hematuria), renal disorders (e.g., hydronephrosis, proteinuria, renal failure, pyelonephritis, urolithiasis, reflux nephropathy, and unilateral obstructive uropathy).

The recitation of "Neural/Sensory" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the nervous system (e.g., as described below under "Neural Activity and Neurological Diseases").

In specific embodiments, a Therapeutic protein having a "Neural/Sensory" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: brain cancer (e.g., brain stem glioma, brain tumors, central nervous system (Primary) lymphoma, central nervous system lymphoma, cerebellar astrocytoma, and cerebral astrocytoma, neurodegenerative disorders (e.g., Alzheimer's Disease, Creutzfeldt-Jakob Disease, Parkinson's Disease, and Idiopathic Presenile Dementia), encephalomyelitis, cerebral malaria, meningitis, metabolic brain diseases (e.g., phenylketonuria and pyruvate carboxylase deficiency), cerebellar ataxia, ataxia telangiectasia, and AIDS Dementia Complex, schizophrenia, attention deficit disorder, hyperactive attention deficit disorder, autism, and obsessive compulsive disorders.

The recitation of "Respiratory" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein,



and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the respiratory system (e.g., as described below under "Respiratory Disorders").

5 In specific embodiments, a Therapeutic protein having a "Respiratory" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cancers of the respiratory system  
10 such as larynx cancer, pharynx cancer, trachea cancer, epiglottis cancer, lung cancer, squamous cell carcinomas, small cell (oat cell) carcinomas, large cell carcinomas, and adenocarcinomas. Allergic reactions, cystic fibrosis, sarcoidosis, histiocytosis X, infiltrative lung diseases (e.g., pulmonary fibrosis and lymphoid interstitial pneumonia), obstructive airway diseases (e.g., asthma, emphysema, chronic or acute bronchitis),  
15 occupational lung diseases (e.g., silicosis and asbestosis), pneumonia, and pleurisy.

The recitation of "Endocrine" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as  
20 described below under "Hyperproliferative Disorders") and diseases or disorders of the respiratory system (e.g., as described below under "Respiratory Disorders"), renal disorders (e.g., as described below under "Renal Disorders"), and disorders of the endocrine system (e.g., as described below under "Endocrine Disorders").

In specific embodiments, a Therapeutic protein having a "Endocrine" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a  
25 Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: cancers of endocrine tissues and organs (e.g., cancers of the hypothalamus, pituitary gland, thyroid gland, parathyroid  
30 glands, pancreas, adrenal glands, ovaries, and testes), diabetes (e.g., diabetes insipidus, type I and type II diabetes mellitus), obesity, disorders related to pituitary glands (e.g., hyperpituitarism, hypopituitarism, and pituitary dwarfism), hypothyroidism,

hyperthyroidism, goiter, reproductive disorders (e.g. male and female infertility), disorders related to adrenal glands (e.g., Addison's Disease, corticosteroid deficiency, and Cushing's Syndrome), kidney cancer (e.g., hypernephroma, transitional cell cancer, and Wilm's tumor), diabetic nephropathy, interstitial nephritis, polycystic kidney disease, glomerulonephritis (e.g., IgM mesangial proliferative glomerulonephritis and glomerulonephritis caused by autoimmune disorders; such as Goodpasture's syndrome), and nephrocalcinosis.

The recitation of "Digestive" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders") and diseases or disorders of the gastrointestinal system (e.g., as described below under "Gastrointestinal Disorders").

In specific embodiments, a Therapeutic protein having a "Digestive" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: ulcerative colitis, appendicitis, Crohn's disease, hepatitis, hepatic encephalopathy, portal hypertension, cholelithiasis, cancer of the digestive system (e.g., biliary tract cancer, stomach cancer, colon cancer, gastric cancer, pancreatic cancer, cancer of the bile duct, tumors of the colon (e.g., polyps or cancers), and cirrhosis), pancreatitis, ulcerative disease, pyloric stenosis, gastroenteritis, gastritis, gastric atrophy, benign tumors of the duodenum, distension, irritable bowel syndrome, malabsorption, congenital disorders of the small intestine, bacterial and parasitic infection, megacolon, Hirschsprung's disease, aganglionic megacolon, acquired megacolon, colitis, anorectal disorders (e.g., anal fistulas, hemorrhoids), congenital disorders of the liver (e.g., Wilson's disease, hemochromatosis, cystic fibrosis, biliary atresia, and alpha-1-antitrypsin deficiency), portal hypertension, cholelithiasis, and jaundice.

The recitation of "Connective/Epithelial" in the "Preferred Indication Y" column indicates that corresponding Therapeutic protein, fusion protein containing the Therapeutic protein, and fragments and variants thereof, may be used for example, to diagnose, treat,

prevent, and/or ameliorate diseases and/or disorders relating to neoplastic diseases (e.g., as described below under "Hyperproliferative Disorders"), cellular and genetic abnormalities (e.g., as described below under "Diseases at the Cellular Level"), angiogenesis (e.g., as described below under "Anti-Angiogenesis Activity"), and or to promote or inhibit  
5 regeneration (e.g., as described below under "Regeneration"), and wound healing (e.g., as described below under "Wound Healing and Epithelial Cell Proliferation").

In specific embodiments, a Therapeutic protein having a "Connective/Epithelial" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and  
10 fragments and variants thereof, may be used for example, to diagnose, treat, prevent, and/or ameliorate a disease or disorder selected from the group consisting of: connective tissue metaplasia, mixed connective tissue disease, focal epithelial hyperplasia, epithelial metaplasia, mucoepithelial dysplasia, graft v. host disease, polymyositis, cystic hyperplasia, cerebral dysplasia, tissue hypertrophy, Alzheimer's disease,  
15 lymphoproliferative disorder, Waldenström's macroglobulinemia, Crohn's disease, pernicious anemia, idiopathic Addison's disease, glomerulonephritis, bullous pemphigoid, Sjögren's syndrome, diabetes mellitus, cystic fibrosis, osteoblastoma, osteoclastoma, osteosarcoma, chondrosarcoma, osteoporosis, osteoarthritis, periodontal disease, wound healing, relapsing polychondritis, vasculitis, polyarteritis nodosa, Wegener's  
20 granulomatosis, cellulitis, rheumatoid arthritis, psoriatic arthritis, discoid lupus erythematosus, systemic lupus erythematosus, scleroderma, CREST syndrome, Sjögren's syndrome, polymyositis, dermatomyositis, mixed connective tissue disease, relapsing polychondritis, vasculitis, Henoch-Schönlein syndrome, erythema nodosum, polyarteritis nodosa, temporal (giant cell) arteritis, Takayasu's arteritis, Wegener's granulomatosis,  
25 Reiter's syndrome, Behçet's syndrome, ankylosing spondylitis, cellulitis, keloids, Ehler Danlos syndrome, Marfan syndrome, pseudoxanthoma elasticum, osteogenesis imperfecta, chondrodysplasias, epidermolysis bullosa, Alport syndrome, and cutis laxa.

Therapeutic Protein X	Exemplary Identifier	PCT/Patent Reference	Preferred Indication Y
HETFO52	B03768	US6066724-A	Neural/Sensory, Reproductive
HETEZ10	B03769	US6066724-A	Cancer
HLICR58	B08775	WO200052160-A1	Cancer
HMCIS41	B08776	WO200052160-A1	Cancer
HCESA34	B08891	WO200017222-A1	Cancer
HCRMZ90	B08892	WO200017222-A1	Cancer
HDPXQ54	B08893	WO200017222-A1	Immune/Hematopoietic
HETCL11	B08894	WO200017222-A1	Cancer
HFXDN34	B08895	WO200017222-A1	Neural/Sensory
HKAAV24	B08896	WO200017222-A1	Cancer
HMTBE31	B08897	WO200017222-A1	Cancer
HRADL70	B08898	WO200017222-A1	Excretory, Immune/Hematopoietic
HTXGG31	B08899	WO200017222-A1	Cancer
HWHHL34	B08900	WO200017222-A1	Cancer
HYAAAY40	B08901	WO200017222-A1	Immune/Hematopoietic
HPASA81	B08902	WO200017222-A1	Digestive, Endocrine, Reproductive
HCNDA61	B08903	WO200017222-A1	Digestive, Reproductive
HTHCZ41	B08904	WO200017222-A1	Cancer
HKADJ17	B08905	WO200017222-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive
HMSII78	B08906	WO200017222-A1	Cancer
HCFBL76	B08907	WO200017222-A1	Cancer
HFVHR84	B08908	WO200017222-A1	Connective/Epithelial, Digestive
HIBCB67	B08909	WO200017222-A1	Cancer
HCELI29	B08910	WO200017222-A1	Cancer
HAHDZ77	B08911	WO200017222-A1	Cardiovascular, Mixed Fetal
HDHMA45	B08912	WO200017222-A1	Cardiovascular, Neural/Sensory
HELAW45	B08913	WO200017222-A1	Cardiovascular
HFIAB31	B08914	WO200017222-A1	Cancer
HLWBK05	B08915	WO200017222-A1	Cancer
HLDBX13	B08916	WO200017222-A1	Digestive
HMAGA15	B08917	WO200017222-A1	Cancer
HMWFT53	B08918	WO200017222-A1	Immune/Hematopoietic
HNFJD91	B08919	WO200017222-A1	Cardiovascular, Connective/Epithelial, Immune/Hematopoietic
HTGCM55	B08920	WO200017222-A1	Cardiovascular, Digestive, Immune/Hematopoietic
HTTEX77	B08921	WO200017222-A1	Cancer
HFXDN34	B08922	WO200017222-A1	Neural/Sensory
HDPMI18	B08923	WO200017222-A1	Cancer
HETGL41	B08924	WO200017222-A1	Cancer
HPASA81	B08925	WO200017222-A1	Digestive, Endocrine,

			Reproductive
HCNDA61	B08926	WO200017222-A1	Digestive, Reproductive
HTTEX77	B08927	WO200017222-A1	Cancer
HFXDN34	B08934	WO200017222-A1	Neural/Sensory
HETGL41	B08935	WO200017222-A1	Cancer
HPASA81	B08936	WO200017222-A1	Digestive, Endocrine, Reproductive
HCNDA61	B08940	WO200017222-A1	Digestive, Reproductive
HTTEX77	B08982	WO200017222-A1	Cancer
HAOAB14	B12301	WO200029422-A1	Digestive, Musculoskeletal
HHFBY53	B12302	WO200029422-A1	Cancer
HE2FE69	B12303	WO200029422-A1	Cancer
HNHFI33	B12305	WO200029422-A1	Immune/Hematopoietic
HAMFE15	B12306	WO200029422-A1	Cancer
HAMFE82	B12307	WO200029422-A1	Cancer
HCWEM59	B12308	WO200029422-A1	Immune/Hematopoietic
HDPGE10	B12309	WO200029422-A1	Immune/Hematopoietic
HDPGP94	B12310	WO200029422-A1	Digestive, Immune/Hematopoietic
HFPBY77	B12311	WO200029422-A1	Cancer
HFXHK32	B12312	WO200029422-A1	Neural/Sensory
HMTAK05	B12313	WO200029422-A1	Cancer
HMWDC93	B12314	WO200029422-A1	Immune/Hematopoietic
HSPBY40	B12315	WO200029422-A1	Cancer
HODDO08	B12316	WO200029422-A1	Cancer
HCFNK47	B12317	WO200029422-A1	Cancer
HE2FL70	B12318	WO200029422-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
H2MBY03	B12319	WO200029422-A1	Cancer
HACBS38	B12320	WO200029422-A1	Cancer
HAGFG51	B12321	WO200029422-A1	Neural/Sensory
HBQAB44	B12322	WO200029422-A1	Neural/Sensory, Reproductive, Respiratory
HHEMA59	B12323	WO200029422-A1	Cancer
HJBAY55	B12324	WO200029422-A1	Cancer
HLHEY02	B12325	WO200029422-A1	Endocrine, Respiratory
HSAAO94	B12326	WO200029422-A1	Cancer
HTXKP61	B12327	WO200029422-A1	Cancer
HWABC21	B12328	WO200029422-A1	Cancer
HWBDI30	B12329	WO200029422-A1	Cancer
HYBAR26	B12330	WO200029422-A1	Musculoskeletal
HAJAF57	B12331	WO200029422-A1	Cancer
HAMFE15	B12332	WO200029422-A1	Cancer
HAMFE82	B12333	WO200029422-A1	Cancer
HAMFE15	B12338	WO200029422-A1	Cancer
HAMFE82	B12339	WO200029422-A1	Cancer
HLDOK36	B15551	WO200056752-A2	Cancer
HDPBW68	B15552	WO200056752-A2	Cancer
HHEFO24	B15553	WO200056752-A2	Cardiovascular,

			Immune/Hematopoietic, Neural/Sensory
HEGAL46	B15554	WO200056752-A2	Cancer
HFOYC02	B15555	WO200056752-A2	Cancer
HDABV82	B15556	WO200056752-A2	Cancer
HCEMU42	B15557	WO200056752-A2	Cancer
HSIFO61	B15558	WO200056752-A2	Cancer
HDPBW68	B15559	WO200056752-A2	Cancer
HDPBW68	B15562	WO200056752-A2	Cancer
HSIFO61	B15566	WO200056752-A2	Cancer
HOEAL47	B18715	WO200054651-A2	Cancer
HE9SF68	B18755	WO200055204-A1	Cancer
HLICQ90	B24437	WO200035937-A1	Cancer
HNTSM04	B24438	WO200035937-A1	Cancer
HMCAL59	B24439	WO200035937-A1	Cancer
HMACO04	B24440	WO200035937-A1	Cancer
HMAHY59	B24441	WO200035937-A1	Cancer
HFXLL52	B24442	WO200035937-A1	Neural/Sensory
HKABY55	B24443	WO200035937-A1	Cancer
HCQCF36	B24444	WO200035937-A1	Digestive, Immune/Hematopoietic
HTADO22	B24445	WO200035937-A1	Immune/Hematopoietic
HHFHD92	B24446	WO200035937-A1	Cancer
HNGFW58	B24447	WO200035937-A1	Cancer
HOEFV61	B24448	WO200035937-A1	Cancer
HPIAQ68	B24449	WO200035937-A1	Immune/Hematopoietic, Reproductive
HNFFY60	B24450	WO200035937-A1	Cancer
HCE3H20	B24451	WO200035937-A1	Cancer
HE8EW79	B24452	WO200035937-A1	Cancer
HTTDF41	B24453	WO200035937-A1	Cancer
HSSGJ45	B24454	WO200035937-A1	Cancer
HLWBY76	B24455	WO200035937-A1	Cancer
HDPBN34	B24456	WO200035937-A1	Immune/Hematopoietic
HMSHY73	B24457	WO200035937-A1	Cancer
HPRBF19	B24458	WO200035937-A1	Cancer
HNFJE06	B24459	WO200035937-A1	Immune/Hematopoietic, Musculoskeletal
HCHCF61	B24460	WO200035937-A1	Reproductive
HBJLH40	B24461	WO200035937-A1	Cancer
HDPMV72	B24462	WO200035937-A1	Cancer
HEMFA84	B24463	WO200035937-A1	Cancer
HTOHW95	B24464	WO200035937-A1	Cancer
HUNAH63	B24465	WO200035937-A1	Reproductive
HISBT59	B24466	WO200035937-A1	Cancer
HNTAS52	B24467	WO200035937-A1	Cancer
HRACM44	B24468	WO200035937-A1	Excretory, Immune/Hematopoietic
HFPE577	B24469	WO200035937-A1	Cancer
HUSXU29	B24470	WO200035937-A1	Cancer
HOHBB49	B24471	WO200035937-A1	Musculoskeletal
HRABX31	B24472	WO200035937-A1	Excretory, Immune/Hematopoietic, Musculoskeletal
HROBD68	B24473	WO200035937-A1	Cancer
HMHBE18	B24474	WO200035937-A1	Cancer

HNHDY21	B24475	WO200035937-A1	Immune/Hematopoietic
HOEBZ89	B24476	WO200035937-A1	Cancer
HYAAJ71	B24477	WO200035937-A1	Immune/Hematopoietic
HTEKS16	B24478	WO200035937-A1	Connective/Epithelial, Mixed Fetal, Reproductive
HCUFX40	B24479	WO200035937-A1	Immune/Hematopoietic
HCWDL75	B24480	WO200035937-A1	Cardiovascular, Immune/Hematopoietic
HNHKJ57	B24481	WO200035937-A1	Immune/Hematopoietic
HCMSS06	B24482	WO200035937-A1	Cancer
HIBCE35	B24483	WO200035937-A1	Cancer
HE8EW79	B24484	WO200035937-A1	Cancer
HTTDF41	B24485	WO200035937-A1	Cancer
HSSGJ45	B24486	WO200035937-A1	Cancer
HCMSS06	B24487	WO200035937-A1	Cancer
HCMSS06	B24597	WO200035937-A1	Cancer
HAOAB64	B25576	WO200029435-A1	Musculoskeletal, Reproductive
HOHCH55	B25577	WO200029435-A1	Cancer
HTLEW81	B25578	WO200029435-A1	Cancer
HARAO44	B25579	WO200029435-A1	Neural/Sensory
HDPCL05	B25580	WO200029435-A1	Immune/Hematopoietic
HDPW68	B25581	WO200029435-A1	Cancer
HOHBY69	B25582	WO200029435-A1	Cancer
HCDDP40	B25583	WO200029435-A1	Immune/Hematopoietic, Musculoskeletal
HUSAQ05	B25585	WO200029435-A1	Cancer
HOUDJ81	B25586	WO200029435-A1	Cancer
HPWCM76	B25587	WO200029435-A1	Reproductive
HOHCH55	B25588	WO200029435-A1	Cancer
HDPCL05	B25589	WO200029435-A1	Immune/Hematopoietic
HOHBY69	B25590	WO200029435-A1	Cancer
HUSAQ05	B25592	WO200029435-A1	Cancer
HOUDJ81	B25593	WO200029435-A1	Cancer
HUSAQ05	B25618	WO200029435-A1	Cancer
HE8NG02	B25665	WO200043495-A2	Mixed Fetal, Reproductive
HWBDM37	B25666	WO200043495-A2	Digestive, Immune/Hematopoietic, Reproductive
HODFN71	B25668	WO200043495-A2	Mixed Fetal, Reproductive
HODGE68	B25669	WO200043495-A2	Reproductive
HCECN54	B25670	WO200043495-A2	Excretory, Neural/Sensory
HE8UB86	B25671	WO200043495-A2	Cancer
HNHKY10	B25672	WO200043495-A2	Immune/Hematopoietic
HNHLB93	B25673	WO200043495-A2	Immune/Hematopoietic
HNHON23	B25674	WO200043495-A2	Immune/Hematopoietic, Musculoskeletal
HTEPG70	B25675	WO200043495-A2	Reproductive
HNHOJ75	B25676	WO200043495-A2	Immune/Hematopoietic
HDTIT10	B25677	WO200043495-A2	Cancer
HKAOS84	B25678	WO200043495-A2	Connective/Epithelial
HAPUC89	B25679	WO200043495-A2	Cancer

HWAAD63	B25680	WO200043495-A2	Endocrine, Excretory, Immune/Hematopoietic
HUCPD31	B25681	WO200043495-A2	Cancer
HDQHD03	B25682	WO200043495-A2	Immune/Hematopoietic, Neural/Sensory
HKAKK09	B25683	WO200043495-A2	Connective/Epithelial, Digestive, Mixed Fetal
HOCNF19	B25684	WO200043495-A2	Digestive
HTLIT32	B25685	WO200043495-A2	Reproductive
HODEJ32	B25686	WO200043495-A2	Reproductive
HNHNV54	B25687	WO200043495-A2	Immune/Hematopoietic
HODEE95	B25688	WO200043495-A2	Reproductive
HLHAM10	B25689	WO200043495-A2	Cancer
HNHOG73	B25690	WO200043495-A2	Immune/Hematopoietic
HBGNM47	B25691	WO200043495-A2	Cancer
HAUBA08	B25692	WO200043495-A2	Cancer
HYBBE75	B25693	WO200043495-A2	Musculoskeletal
HTLGY87	B25694	WO200043495-A2	Cancer
HNHPD10	B25695	WO200043495-A2	Immune/Hematopoietic
HODEI83	B25696	WO200043495-A2	Reproductive
HMUAI20	B25697	WO200043495-A2	Cancer
HE9OW20	B25698	WO200043495-A2	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HDTIT10	B25699	WO200043495-A2	Cancer
HWAAD63	B25700	WO200043495-A2	Endocrine, Excretory, Immune/Hematopoietic
HWAAD63	B25701	WO200043495-A2	Endocrine, Excretory, Immune/Hematopoietic
HEMCV19	B25703	WO200043495-A2	Cancer
HEMCV19	B25704	WO200043495-A2	Cancer
HEMCV19	B25705	WO200043495-A2	Cancer
HAUBA08	B25706	WO200043495-A2	Cancer
HEMCV19	B25707	WO200043495-A2	Cancer
HE9OW20	B25715	WO200043495-A2	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HT4SB02	B27560	WO200055175-A1	Immune/Hematopoietic
HCHAC68	B27562	WO200055175-A1	Cancer
HCHCA79	B27563	WO200055175-A1	Digestive, Neural/Sensory, Reproductive
HCHMY57	B27564	WO200055175-A1	Cancer
HCHOY52	B27566	WO200055175-A1	Cancer
HCHQB93	B27567	WO200055175-A1	Cancer
HCMSA37	B27568	WO200055175-A1	Cardiovascular
HCMSX51	B27570	WO200055175-A1	Cancer
HCNAI74	B27571	WO200055175-A1	Digestive
HCPAE41	B27578	WO200055175-A1	Cancer
HCQAQ47	B27580	WO200055175-A1	Cancer
HCQBH72	B27581	WO200055175-A1	Digestive, Excretory,



HCQDD32	B27585	WO200055175-A1	Immune/Hematopoietic Digestive, Immune/Hematopoietic, Reproductive
HCQDT67	B27586	WO200055175-A1	Cancer
HCRA Y10	B27587	WO200055175-A1	Cancer
HCRBI79	B27589	WO200055175-A1	Cancer
HN FAD50	B27591	WO200055175-A1	Cancer
HCRNF78	B27592	WO200055175-A1	Cancer
HCUAF85	B27594	WO200055175-A1	Immune/Hematopoietic
HCUBM41	B27598	WO200055175-A1	Immune/Hematopoietic
HCUBN69	B27599	WO200055175-A1	Immune/Hematopoietic
HC UDD64	B27602	WO200055175-A1	Cancer
HCUEC55	B27604	WO200055175-A1	Immune/Hematopoietic
HCUF C77	B27607	WO200055175-A1	Cancer
HB JBR40	B27686	WO200055201-A1	Immune/Hematopoietic
HB JCH46	B27687	WO200055201-A1	Immune/Hematopoietic, Musculoskeletal
HB JFU30	B27698	WO200055201-A1	Cancer
HB JAY14	B27704	WO200055201-A1	Immune/Hematopoietic
HB JND04	B27708	WO200055201-A1	Cancer
HBKEA94	B27711	WO200055201-A1	Cancer
HB JDS79	B27712	WO200055201-A1	Cancer
HBKEI41	B27713	WO200055201-A1	Endocrine, Mixed Fetal, Reproductive
HB JHO83	B27720	WO200055201-A1	Immune/Hematopoietic, Reproductive
HBMCT40	B27721	WO200055201-A1	Cancer
HBMTX26	B27724	WO200055201-A1	Immune/Hematopoietic
HBMTY48	B27725	WO200055201-A1	Immune/Hematopoietic, Reproductive
HBMUD59	B27726	WO200055201-A1	Cancer
HBMUI10	B27727	WO200055201-A1	Cancer
HCEEU18	B27794	WO200055199-A1	Cancer
HCDCB03	B27795	WO200055199-A1	Cancer
HCE1G78	B27797	WO200055199-A1	Cancer
HCDEB19	B27799	WO200055199-A1	Cancer
HCEDR26	B27801	WO200055199-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HCDBW67	B27804	WO200055199-A1	Cancer
HCDDX81	B27808	WO200055199-A1	Musculoskeletal
HBZAI75	B27809	WO200055199-A1	Digestive, Reproductive
HCDEN46	B27810	WO200055199-A1	Cancer
HCE1D45	B27811	WO200055199-A1	Cancer
HCE1Y27	B27813	WO200055199-A1	Digestive, Neural/Sensory, Reproductive
HCE2I23	B27816	WO200055199-A1	Neural/Sensory
HCE2P90	B27817	WO200055199-A1	Neural/Sensory
HCE3A54	B27818	WO200055199-A1	Neural/Sensory
HCE3D89	B27819	WO200055199-A1	Endocrine, Neural/Sensory
HCE3N23	B27820	WO200055199-A1	Cancer

HCE4T64	B27821	WO200055199-A1	Cancer
HCE5J64	B27823	WO200055199-A1	Digestive, Neural/Sensory
HCECO77	B27824	WO200055199-A1	Cancer
HCEDH42	B27825	WO200055199-A1	Neural/Sensory
HCEDJ05	B27826	WO200055199-A1	Neural/Sensory
HCEEE79	B27829	WO200055199-A1	Neural/Sensory
HCEFH31	B27837	WO200055199-A1	Cancer
HCDDL48	B27838	WO200055199-A1	Musculoskeletal
HFVIC33	B27908	WO200055171-A1	Cancer
HEMAH05	B27909	WO200055171-A1	Cancer
HHSBI65	B27911	WO200055171-A1	Cancer
HLEAA24	B27917	WO200055171-A1	Immune/Hematopoietic
HPTTQ91	B27919	WO200055171-A1	Cancer
HPMGY89	B27923	WO200055171-A1	Cancer
H2LAO03	B27933	WO200055171-A1	Cancer
H2MBA76	B27937	WO200055171-A1	Cancer
H2MBF60	B27938	WO200055171-A1	Cancer
H6BSF56	B27939	WO200055171-A1	Cancer
H6BSM88	B27940	WO200055171-A1	Cancer
H6EEU40	B27941	WO200055171-A1	Cancer
HACAB68	B27943	WO200055171-A1	Connective/Epithelial, Immune/Hematopoietic
HACBA04	B27945	WO200055171-A1	Cancer
HACBJ11	B27946	WO200055171-A1	Cancer
HACBS86	B27947	WO200055171-A1	Cancer
HACBT91	B27948	WO200055171-A1	Cancer
HADAB60	B27951	WO200055171-A1	Cancer
HADDE71	B27956	WO200055171-A1	Cancer
HAGFU31	B28014	WO200055177-A2	Neural/Sensory
HAPBR13	B28017	WO200055177-A2	Cancer
HAQBG57	B28020	WO200055177-A2	Cancer
HARAE26	B28022	WO200055177-A2	Neural/Sensory
HAHEM51	B28032	WO200055177-A2	Cardiovascular
HAICL90	B28035	WO200055177-A2	Digestive, Immune/Hematopoietic, Reproductive
HAMFC67	B28038	WO200055177-A2	Cancer
HAPBU09	B28041	WO200055177-A2	Cancer
HAPNL62	B28043	WO200055177-A2	Cancer
HAPNY10	B28045	WO200055177-A2	Cancer
HAPQU71	B28048	WO200055177-A2	Cancer
HARAT69	B28054	WO200055177-A2	Cancer
HAGEU26	B28059	WO200055177-A2	Neural/Sensory
HANGB24	B28060	WO200055177-A2	Cancer
HNGER85	B28286	WO200058355-A1	Immune/Hematopoietic
HNGET33	B28287	WO200058355-A1	Immune/Hematopoietic
HNGFA25	B28292	WO200058355-A1	Immune/Hematopoietic
HNGFG04	B28297	WO200058355-A1	Immune/Hematopoietic
HNGFG74	B28298	WO200058355-A1	Immune/Hematopoietic
HNGFI21	B28301	WO200058355-A1	Cancer
HNGFM31	B28302	WO200058355-A1	Immune/Hematopoietic
HCUCK44	B28303	WO200058355-A1	Cancer
HNGFQ18	B28304	WO200058355-A1	Immune/Hematopoietic
HNGFR54	B28305	WO200058355-A1	Immune/Hematopoietic

HNGGF13	B28309	WO200058355-A1	Immune/Hematopoietic
HNGGL11	B28311	WO200058355-A1	Immune/Hematopoietic
HNGGP65	B28312	WO200058355-A1	Immune/Hematopoietic
HNGHM47	B28316	WO200058355-A1	Immune/Hematopoietic
HNGIH40	B28318	WO200058355-A1	Immune/Hematopoietic
HNGIM83	B28321	WO200058355-A1	Immune/Hematopoietic
HNGIS27	B28322	WO200058355-A1	Immune/Hematopoietic
HADFB84	B28707	WO200055198-A1	Cancer
HADFD01	B28708	WO200055198-A1	Cancer
HADFK11	B28709	WO200055198-A1	Connective/Epithelial
HADFT44	B28710	WO200055198-A1	Connective/Epithelial, Mixed Fetal, Neural/Sensory
HADGD93	B28714	WO200055198-A1	Cardiovascular, Connective/Epithelial
HAFBB15	B28716	WO200055198-A1	Cancer
HAGAB62	B28718	WO200055198-A1	Cancer
HAGAF75	B28720	WO200055198-A1	Digestive, Neural/Sensory
HAGAZ36	B28722	WO200055198-A1	Neural/Sensory
H2CBH91	B28725	WO200055198-A1	Cancer
HAGBV29	B28730	WO200055198-A1	Immune/Hematopoietic, Neural/Sensory
HAGCH67	B28732	WO200055198-A1	Neural/Sensory
HAGCI69	B28733	WO200055198-A1	Neural/Sensory, Reproductive
HAGCT33	B28734	WO200055198-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HAGDG84	B28737	WO200055198-A1	Immune/Hematopoietic, Neural/Sensory
HAGDO70	B28743	WO200055198-A1	Cancer
HAGDW68	B28746	WO200055198-A1	Endocrine, Neural/Sensory
HAGEG10	B28748	WO200055198-A1	Cancer
HAGEK37	B28750	WO200055198-A1	Cancer
HTADO61	B29803	WO200061779-A1	Cancer
HELDH39	B29805	WO200061779-A1	Cancer
HSLCV16	B29806	WO200061779-A1	Cancer
HTOJL95	B29807	WO200061779-A1	Cancer
HOEBK60	B29810	WO200061779-A1	Cancer
HSAWN53	B29813	WO200061779-A1	Immune/Hematopoietic
HORBS82	B29814	WO200061779-A1	Cancer
HORBV76	B29815	WO200061779-A1	Cardiovascular, Immune/Hematopoietic, Reproductive
HTEHA56	B29822	WO200061779-A1	Cancer
HMWER46	B29828	WO200061779-A1	Cancer
HPRAD30	B29829	WO200061779-A1	Cancer
HTLDD89	B29832	WO200061779-A1	Reproductive
HMCJC19	B29835	WO200061779-A1	Immune/Hematopoietic
HROBW46	B29841	WO200061779-A1	Digestive, Immune/Hematopoietic
HSOBB94	B29842	WO200061779-A1	Cancer
HSOBP75	B29844	WO200061779-A1	Cancer
HNHKS19	B29848	WO200061779-A1	Immune/Hematopoietic,

			Reproductive
HNHKV56	B29849	WO200061779-A1	Immune/Hematopoietic
HWLIL31	B29850	WO200061779-A1	Cancer
HMVBC31	B32002	WO200058350-A1	Cancer
HMVBC84	B32003	WO200058350-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HMWAO82	B32006	WO200058350-A1	Immune/Hematopoietic
HMWBK35	B32008	WO200058350-A1	Cancer
HHENT16	B32010	WO200058350-A1	Cancer
HMWEF46	B32020	WO200058350-A1	Immune/Hematopoietic
HMWEX02	B32022	WO200058350-A1	Cancer
HKGCK41	B32027	WO200058350-A1	Cancer
HMWHR36	B32029	WO200058350-A1	Immune/Hematopoietic
HMWIQ26	B32031	WO200058350-A1	Cancer
HMWIU49	B32032	WO200058350-A1	Cancer
HMWJJ64	B32035	WO200058350-A1	Cancer
HNEAK38	B32040	WO200058350-A1	Immune/Hematopoietic
HNECD52	B32043	WO200058350-A1	Immune/Hematopoietic, Neural/Sensory
HNECL75	B32045	WO200058350-A1	Cancer
HNECW49	B32046	WO200058350-A1	Immune/Hematopoietic
HNEDA05	B32048	WO200058350-A1	Immune/Hematopoietic
HETKD92	B32371	WO200047602-A1	Cancer
HNTSN12	B32372	WO200047602-A1	Cancer
HMQBv64	B32373	WO200047602-A1	Cancer
HTELM16	B32374	WO200047602-A1	Reproductive
HSDFJ26	B32375	WO200047602-A1	Cancer
HNGND37	B32376	WO200047602-A1	Cancer
HWBDV80	B32377	WO200047602-A1	Cancer
HDPOR60	B32378	WO200047602-A1	Cancer
HWBFY57	B32379	WO200047602-A1	Digestive, Immune/Hematopoietic
HNHOL24	B32380	WO200047602-A1	Immune/Hematopoietic
HWHIB26	B32381	WO200047602-A1	Cancer
HHAAF20	B32382	WO200047602-A1	Cancer
HNHNE04	B32383	WO200047602-A1	Immune/Hematopoietic
HSAAO65	B32384	WO200047602-A1	Cancer
HTENO07	B32385	WO200047602-A1	Reproductive
HTLHI35	B32386	WO200047602-A1	Immune/Hematopoietic, Musculoskeletal, Reproductive
HTLHY14	B32387	WO200047602-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HTXKY63	B32388	WO200047602-A1	Immune/Hematopoietic
HOUDC53	B32389	WO200047602-A1	Cancer
HWLGV78	B32390	WO200047602-A1	Cancer
HCGLB30	B32391	WO200047602-A1	Cancer
HTELP17	B32392	WO200047602-A1	Cancer
HFXBS43	B32393	WO200047602-A1	Neural/Sensory
HNGOM56	B32394	WO200047602-A1	Immune/Hematopoietic
HTXON32	B32395	WO200047602-A1	Immune/Hematopoietic
HDQHO40	B32396	WO200047602-A1	Cancer
HKBAB11	B32397	WO200047602-A1	Immune/Hematopoietic
HRAAN56	B32398	WO200047602-A1	Excretory,

HFIDS78	B32399	WO200047602-A1	Reproductive Connective/Epithelial, Digestive, Musculoskeletal
HSDIB20	B32400	WO200047602-A1	Cancer
HHEPU04	B32401	WO200047602-A1	Cancer
HNGKN89	B32402	WO200047602-A1	Immune/Hematopoietic
HE9TH18	B32403	WO200047602-A1	Cancer
HHFHM89	B32404	WO200047602-A1	Cancer
HASAV70	B32405	WO200047602-A1	Cancer
HSDFJ26	B32406	WO200047602-A1	Cancer
HODAA16	B32407	WO200047602-A1	Cancer
HODAA16	B32408	WO200047602-A1	Cancer
HGBIB74	B32409	WO200047602-A1	Cancer
HCRMU04	B32410	WO200047602-A1	Cancer
HSAAO65	B32411	WO200047602-A1	Cancer
HSAAO65	B32412	WO200047602-A1	Cancer
HSMBB92	B32413	WO200047602-A1	Cancer
HHEPU04	B32414	WO200047602-A1	Cancer
HLDNA86	B32415	WO200047602-A1	Cancer
HE9TH18	B32416	WO200047602-A1	Cancer
HHFHM33	B32447	WO200047602-A1	Cancer
HUUAV63	B32481	WO200047602-A1	Cancer
HE2CJ53	B33721	WO200056753-A1	Cancer
HE2HF76	B33724	WO200056753-A1	Cancer
HDTDE66	B33729	WO200056753-A1	Cancer
HDTKJ29	B33735	WO200056753-A1	Cancer
HDTLM18	B33736	WO200056753-A1	Immune/Hematopoietic
HE2AI94	B33740	WO200056753-A1	Cancer
HE2BD72	B33741	WO200056753-A1	Cancer
HE2CH58	B33744	WO200056753-A1	Digestive, Mixed Fetal
HE2NW57	B33753	WO200056753-A1	Mixed Fetal
HE2PJ56	B33755	WO200056753-A1	Cancer
HE2PO93	B33756	WO200056753-A1	Cancer
HE6AU52	B33757	WO200056753-A1	Mixed Fetal
HAEAV42	B33758	WO200056753-A1	Cancer
HE2AT61	B33759	WO200056753-A1	Cancer
HE2CK47	B33761	WO200056753-A1	Cancer
HE2DJ84	B33763	WO200056753-A1	Cancer
HE2CJ53	B33770	WO200056753-A1	Cancer
HSHAS72	B33832	WO200056753-A1	Cancer
HEMDR05	B33845	WO200056881-A1	Cardiovascular, Digestive, Immune/Hematopoietic
HADXA10	B33846	WO200056881-A1	Cancer
HEOMF59	B33847	WO200056881-A1	Immune/Hematopoietic
HEONP08	B33854	WO200056881-A1	Immune/Hematopoietic
HEPAD15	B33855	WO200056881-A1	Endocrine, Reproductive
HEIAC52	B33860	WO200056881-A1	Cancer
HEQAP92	B33862	WO200056881-A1	Cancer
HEQBM94	B33865	WO200056881-A1	Cancer
HETAA62	B33870	WO200056881-A1	Cancer
HETAY67	B33873	WO200056881-A1	Connective/Epithelial, Reproductive

HETDP76	B33874	WO200056881-A1	Cancer
HEQBF89	B33875	WO200056881-A1	Reproductive
HETIN36	B33877	WO200056881-A1	Cancer
HFAUA23	B33881	WO200056881-A1	Cancer
HFCAG75	B33882	WO200056881-A1	Cancer
HFCAQ17	B33883	WO200056881-A1	Cancer
HFCDN13	B33887	WO200056881-A1	Cancer
HFCDT67	B33888	WO200056881-A1	Cancer
HFCEI04	B33891	WO200056881-A1	Neural/Sensory
HTSGY89	B33946	WO200056881-A1	Cancer
HFCAQ17	B33947	WO200056881-A1	Cancer
HGLAH86	B33965	WO200056765-A1	Immune/Hematopoietic
HHEBP28	B33971	WO200056765-A1	Cancer
HHEMC55	B33973	WO200056765-A1	Immune/Hematopoietic
HHEMM20	B33974	WO200056765-A1	Immune/Hematopoietic
HHEMP35	B33976	WO200056765-A1	Cancer
HHEMZ08	B33977	WO200056765-A1	Cancer
HHENR74	B33980	WO200056765-A1	Immune/Hematopoietic
HHEOK77	B33983	WO200056765-A1	Cancer
HHEQI04	B33986	WO200056765-A1	Connective/Epithelial, Excretory, Immune/Hematopoietic
HHFBA31	B33987	WO200056765-A1	Cancer
HHFFF87	B33992	WO200056765-A1	Cancer
HHFFL34	B33993	WO200056765-A1	Cancer
HHFFS40	B33994	WO200056765-A1	Cancer
HHGBF91	B34005	WO200056765-A1	Cancer
HE9NB82	B34092	WO200056755-A1	Cancer
HEAAC21	B34095	WO200056755-A1	Cancer
HEAAM54	B34100	WO200056755-A1	Reproductive
HEAAU28	B34102	WO200056755-A1	Reproductive
HEBAT05	B34104	WO200056755-A1	Cancer
HEBCN80	B34107	WO200056755-A1	Neural/Sensory
HEBCY54	B34108	WO200056755-A1	Cancer
HEBDW31	B34111	WO200056755-A1	Cancer
HEBFL36	B34112	WO200056755-A1	Neural/Sensory
HEBGE07	B34114	WO200056755-A1	Neural/Sensory
HEBGE23	B34115	WO200056755-A1	Cancer
HEGAI20	B34119	WO200056755-A1	Reproductive
HEBCI18	B34121	WO200056755-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HEBDF90	B34125	WO200056755-A1	Cancer
HELDK79	B34127	WO200056755-A1	Cardiovascular
HELEL76	B34130	WO200056755-A1	Cancer
HELFO30	B34131	WO200056755-A1	Cancer
HEMCJ80	B34138	WO200056755-A1	Cancer
HDPAR73	B34201	WO200056755-A1	Cancer
HDPAR73	B34202	WO200056755-A1	Cancer
HATBI94	B34222	WO200055352-A2	Cancer
HATCB45	B34224	WO200055352-A2	Endocrine, Immune/Hematopoietic
HATDW05	B34229	WO200055352-A2	Endocrine
HATEH20	B34231	WO200055352-A2	Cancer
HAWBA65	B34233	WO200055352-A2	Cancer

HBBBA42	B34236	WO200055352-A2	Cancer
HBBBE83	B34238	WO200055352-A2	Cancer
HBBMA11	B34239	WO200055352-A2	Neural/Sensory
HBCGE46	B34244	WO200055352-A2	Musculoskeletal
HBGML95	B34249	WO200055352-A2	Reproductive
HBHAA05	B34251	WO200055352-A2	Neural/Sensory
HBHAA53	B34252	WO200055352-A2	Neural/Sensory
HBIAA59	B34253	WO200055352-A2	Cancer
HBICW51	B34262	WO200055352-A2	Digestive, Immune/Hematopoietic, Neural/Sensory
HFCET43	B34299	WO200056883-A1	Cancer
HFEAG55	B34302	WO200056883-A1	Cancer
HFEAY59	B34304	WO200056883-A1	Connective/Epithelial
HFFAV61	B34308	WO200056883-A1	Neural/Sensory
HFGAN63	B34312	WO200056883-A1	Cancer
HFICH70	B34316	WO200056883-A1	Musculoskeletal
HFIHQ57	B34317	WO200056883-A1	Musculoskeletal, Reproductive
HFIHZ75	B34318	WO200056883-A1	Cancer
HFIIA29	B34321	WO200056883-A1	Cancer
HFIJD81	B34322	WO200056883-A1	Cancer
HFIUK66	B34324	WO200056883-A1	Cancer
HFIXC39	B34326	WO200056883-A1	Cancer
HFIXC69	B34327	WO200056883-A1	Cancer
HLWAU42	B34329	WO200056883-A1	Cancer
HFIZF51	B34331	WO200056883-A1	Musculoskeletal
HFKDX53	B34333	WO200056883-A1	Cancer
HFKEG63	B34335	WO200056883-A1	Excretory
HFKES05	B34336	WO200056883-A1	Cancer
HFKES35	B34337	WO200056883-A1	Cancer
HFKEU12	B34338	WO200056883-A1	Excretory
HFOYR54	B34344	WO200056883-A1	Cancer
HFPBJ64	B34347	WO200056883-A1	Musculoskeletal, Neural/Sensory
HFXBV67	B34441	WO200056767-A1	Digestive, Neural/Sensory
HFXBY20	B34442	WO200056767-A1	Neural/Sensory
HFXGT51	B34462	WO200056767-A1	Neural/Sensory
HFXGW04	B34463	WO200056767-A1	Cancer
HFXHL83	B34466	WO200056767-A1	Neural/Sensory
HFXJB21	B34468	WO200056767-A1	Neural/Sensory
HFXJN93	B34469	WO200056767-A1	Neural/Sensory
HFXJT53	B34470	WO200056767-A1	Cancer
HFXLK91	B34472	WO200056767-A1	Cancer
HFXHM49	B34473	WO200056767-A1	Neural/Sensory
HGBDV35	B34474	WO200056767-A1	Cancer
HEPCU48	B34476	WO200056767-A1	Cancer
HGBGN34	B34478	WO200056767-A1	Connective/Epithelial, Digestive, Reproductive
HGBGX31	B34479	WO200056767-A1	Cancer
HGBHP91	B34482	WO200056767-A1	Digestive
HCEFN51	B34580	WO200056751-A1	Cancer
HCEFZ82	B34581	WO200056751-A1	Cancer
HCEJL08	B34585	WO200056751-A1	Cancer

HCENN67	B34588	WO200056751-A1	Digestive, Endocrine, Neural/Sensory
HCEPC90	B34592	WO200056751-A1	Neural/Sensory
HCETL19	B34597	WO200056751-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HCFAT42	B34602	WO200056751-A1	Immune/Hematopoietic
HCFAT66	B34603	WO200056751-A1	Immune/Hematopoietic
HCFBM77	B34605	WO200056751-A1	Immune/Hematopoietic
HCFLJ52	B34611	WO200056751-A1	Cancer
HCFLP48	B34613	WO200056751-A1	Immune/Hematopoietic
HCFLQ12	B34614	WO200056751-A1	Cancer
HCFMA39	B34617	WO200056751-A1	Immune/Hematopoietic
HCFML07	B34619	WO200056751-A1	Cancer
HCFMX88	B34620	WO200056751-A1	Immune/Hematopoietic, Neural/Sensory
HCFNN16	B34623	WO200056751-A1	Cancer
HCFNN75	B34624	WO200056751-A1	Cancer
HLYBI48	B34774	WO200058356-A1	Immune/Hematopoietic
HFKE35	B34777	WO200058356-A1	Cancer
HLYBU15	B34781	WO200058356-A1	Immune/Hematopoietic
HLYDX01	B34789	WO200058356-A1	Cancer
HLYEA60	B34790	WO200058356-A1	Cancer
HLYEU59	B34793	WO200058356-A1	Immune/Hematopoietic
HLYGE16	B34794	WO200058356-A1	Cancer
HLYGV19	B34795	WO200058356-A1	Cancer
HLYGY91	B34796	WO200058356-A1	Cancer
HMADJ14	B34797	WO200058356-A1	Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HMAGF01	B34798	WO200058356-A1	Cancer
HMDAB44	B34806	WO200058356-A1	Neural/Sensory
HMDAE88	B34808	WO200058356-A1	Neural/Sensory
HMDAG62	B34809	WO200058356-A1	Cancer
HMDAK20	B34810	WO200058356-A1	Neural/Sensory
HMECM77	B34815	WO200058356-A1	Cardiovascular
HMECQ59	B34816	WO200058356-A1	Cancer
HMEEZ07	B34821	WO200058356-A1	Cardiovascular, Reproductive
HDPCV29	B34856	WO200056766-A1	Immune/Hematopoietic
HDPCW16	B34857	WO200056766-A1	Cancer
HDPFG13	B34859	WO200056766-A1	Cancer
HDPFU43	B34860	WO200056766-A1	Cancer
HDPFZ05	B34861	WO200056766-A1	Immune/Hematopoietic, Neural/Sensory
HDPGA84	B34862	WO200056766-A1	Cancer
HDPIH25	B34864	WO200056766-A1	Cancer
HDPKC55	B34866	WO200056766-A1	Cardiovascular, Immune/Hematopoietic, Reproductive
HDPNC21	B34868	WO200056766-A1	Cancer
HDPOL37	B34869	WO200056766-A1	Immune/Hematopoietic, Reproductive
HDPSZ07	B34871	WO200056766-A1	Immune/Hematopoietic
HDPXN20	B34872	WO200056766-A1	Immune/Hematopoietic



HDQGN08	B34874	WO200056766-A1	Immune/Hematopoietic
HDPGE24	B34877	WO200056766-A1	Cancer
HDPJV53	B34878	WO200056766-A1	Immune/Hematopoietic
HDPOC24	B34881	WO200056766-A1	Cancer
HDPPC19	B34883	WO200056766-A1	Immune/Hematopoietic
HBCAO31	B34886	WO200056766-A1	Cancer
HDQGD06	B34889	WO200056766-A1	Cancer
HDRAA17	B34890	WO200056766-A1	Cancer
HDRAC68	B34891	WO200056766-A1	Cancer
HDSAH37	B34893	WO200056766-A1	Connective/Epithelial
HDSAP15	B34896	WO200056766-A1	Cancer
HDTAS57	B34897	WO200056766-A1	Cancer
HDPFU43	B34916	WO200056766-A1	Cancer
HDPKC55	B34932	WO200056766-A1	Cardiovascular, Immune/Hematopoietic, Reproductive
HPRCB54	B36696	WO200071150-A1	Cancer
HMQAT69	B37348	WO200058335-A1	Cancer
HMQBL90	B37349	WO200058335-A1	Digestive, Immune/Hematopoietic
HMQCX41	B37354	WO200058335-A1	Immune/Hematopoietic
HMQDU07	B37356	WO200058335-A1	Digestive, Immune/Hematopoietic, Musculoskeletal
HMSDI67	B37365	WO200058335-A1	Digestive, Immune/Hematopoietic
HMSHC86	B37372	WO200058335-A1	Immune/Hematopoietic
HMSII36	B37376	WO200058335-A1	Immune/Hematopoietic
HMSIT42	B37377	WO200058335-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HMSKQ91	B37381	WO200058335-A1	Immune/Hematopoietic
HMTAT36	B37384	WO200058335-A1	Cancer
HMUBK53	B37390	WO200058335-A1	Cancer
HMUBO15	B37392	WO200058335-A1	Cancer
HMUBZ15	B37393	WO200058335-A1	Cancer
HMSLF15	B37984	WO200055371-A1	Cancer
HKAET41	B37985	WO200055371-A1	Connective/Epithelial, Digestive, Reproductive
HE9RJ42	B37987	WO200055371-A1	Mixed Fetal
HDPAS92	B37988	WO200055371-A1	Cancer
HATDF29	B37989	WO200055371-A1	Cancer
HWLHH15	B37990	WO200055371-A1	Digestive
HBXFL29	B37991	WO200055371-A1	Cancer
HKGBF67	B37992	WO200055371-A1	Cancer
HWHGP71	B37993	WO200055371-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive
HLWCU38	B37994	WO200055371-A1	Cancer
HMTAX46	B37995	WO200055371-A1	Cancer
HIBEU15	B37996	WO200055371-A1	Excretory, Immune/Hematopoietic, Neural/Sensory
HDPQV66	B37997	WO200055371-A1	Cancer
HFXGW52	B37998	WO200055371-A1	Neural/Sensory

HHEQR55	B37999	WO200055371-A1	Immune/Hematopoietic
HNHNW84	B38000	WO200055371-A1	Immune/Hematopoietic
HABX74	B38001	WO200055371-A1	Cancer
HCUGE72	B38002	WO200055371-A1	Cancer
HTEQI22	B38003	WO200055371-A1	Cancer
HDPYE41	B38004	WO200055371-A1	Immune/Hematopoietic
HDTI23	B38005	WO200055371-A1	Immune/Hematopoietic
HAMFL84	B38007	WO200055371-A1	Cancer
HTELW37	B38008	WO200055371-A1	Reproductive
HNGOU56	B38009	WO200055371-A1	Immune/Hematopoietic
HOUHD63	B38010	WO200055371-A1	Cancer
HPJCX13	B38011	WO200055371-A1	Cancer
HNHCT15	B38012	WO200055371-A1	Cancer
HKGBF67	B38013	WO200055371-A1	Cancer
HWHGP71	B38014	WO200055371-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive
HTEQI22	B38016	WO200055371-A1	Cancer
HJBCI01	B38017	WO200055371-A1	Cancer
HTSFV18	B38018	WO200055371-A1	Cancer
HPJBF63	B38019	WO200055371-A1	Cancer
HWHGP71	B38044	WO200055371-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive
HNEDU46	B38119	WO200058468-A2	Cancer
HNFDY31	B38124	WO200058468-A2	Cancer
HNFEA17	B38125	WO200058468-A2	Cancer
HNFET12	B38127	WO200058468-A2	Immune/Hematopoietic
HNFGRO8	B38129	WO200058468-A2	Immune/Hematopoietic
HNFGW37	B38130	WO200058468-A2	Immune/Hematopoietic
HNFGW53	B38131	WO200058468-A2	Cancer
HNFHA34	B38132	WO200058468-A2	Cancer
HNFEJ27	B38137	WO200058468-A2	Immune/Hematopoietic
HNGAM58	B38143	WO200058468-A2	Immune/Hematopoietic
HNGAT83	B38144	WO200058468-A2	Immune/Hematopoietic
HNGBE63	B38148	WO200058468-A2	Immune/Hematopoietic
HNGBH53	B38149	WO200058468-A2	Immune/Hematopoietic
HNGBJ74	B38150	WO200058468-A2	Immune/Hematopoietic
HNGBQ61	B38152	WO200058468-A2	Immune/Hematopoietic
HNGBW25	B38154	WO200058468-A2	Immune/Hematopoietic
HNGCF64	B38156	WO200058468-A2	Immune/Hematopoietic
HNGDH22	B38158	WO200058468-A2	Immune/Hematopoietic
HNGDQ38	B38161	WO200058468-A2	Immune/Hematopoietic
HNGDR39	B38162	WO200058468-A2	Immune/Hematopoietic
HNGEA34	B38165	WO200058468-A2	Digestive, Immune/Hematopoietic
HTOJB02	B38205	WO200058469-A1	Immune/Hematopoietic
HSDEA26	B38207	WO200058469-A1	Neural/Sensory
HATCF80	B38209	WO200058469-A1	Cancer
HTOAK03	B38215	WO200058469-A1	Cancer
HSLAB11	B38216	WO200058469-A1	Cancer
HSJAU93	B38218	WO200058469-A1	Cancer
HSHBT15	B38221	WO200058469-A1	Cancer
HSLCS31	B38234	WO200058469-A1	Cancer
HSLCS34	B38235	WO200058469-A1	Cancer

HOBNF51	B38237	WO200058469-A1	Cancer
HSFAM19	B38242	WO200058469-A1	Cancer
HNHEY29	B38245	WO200058469-A1	Immune/Hematopoietic
HTHDB20	B38248	WO200058469-A1	Immune/Hematopoietic
HPMGM06	B38250	WO200058469-A1	Digestive, Neural/Sensory, Reproductive
HDPMA04	B38321	WO200061623-A1	Immune/Hematopoietic
HEMFQ46	B38322	WO200061623-A1	Cancer
HKAJK47	B38324	WO200061623-A1	Cancer
HCGMF16	B38325	WO200061623-A1	Cancer
HMSGU01	B38326	WO200061623-A1	Cancer
HNTCE26	B38327	WO200061623-A1	Cancer
HPTTI70	B38328	WO200061623-A1	Cancer
HNSAD53	B38329	WO200061623-A1	Digestive
HTEBV72	B38330	WO200061623-A1	Reproductive
HCE3Z61	B38331	WO200061623-A1	Cancer
HSSGD52	B38332	WO200061623-A1	Cancer
HAPSA79	B38333	WO200061623-A1	Cancer
HASAU84	B38334	WO200061623-A1	Cancer
HLWEA51	B38335	WO200061623-A1	Cancer
HNFI34	B38336	WO200061623-A1	Cancer
HTELS08	B38337	WO200061623-A1	Reproductive
HTLEJ24	B38338	WO200061623-A1	Cancer
HCEHF62	B38339	WO200061623-A1	Cancer
HUFBY15	B38340	WO200061623-A1	Digestive, Musculoskeletal, Reproductive
HELHD85	B38341	WO200061623-A1	Cancer
HOFNY91	B38342	WO200061623-A1	Cancer
HEGAK44	B38343	WO200061623-A1	Cancer
HETBA14	B38344	WO200061623-A1	Cancer
HBAFV19	B38345	WO200061623-A1	Cancer
HTXDO17	B38346	WO200061623-A1	Immune/Hematopoietic, Neural/Sensory, Respiratory
HE8DS15	B38347	WO200061623-A1	Cancer
HLDOW79	B38348	WO200061623-A1	Cardiovascular, Digestive
HOFND85	B38349	WO200061623-A1	Cancer
HBIBU30	B38350	WO200061623-A1	Cancer
HODFG71	B38351	WO200061623-A1	Reproductive
HNHGE28	B38352	WO200061623-A1	Cancer
HYASD09	B38355	WO200061623-A1	Cancer
HDPC63	B38356	WO200061623-A1	Cancer
HBDAD07	B38357	WO200061623-A1	Immune/Hematopoietic
HTOHG09	B38361	WO200061623-A1	Cancer
HWBFX31	B38362	WO200061623-A1	Cancer
HLHDP16	B38363	WO200061623-A1	Cancer
HSDBC88	B38364	WO200061623-A1	Cancer
HOVBX78	B38365	WO200061623-A1	Cancer
HWADJ89	B38367	WO200061623-A1	Immune/Hematopoietic
HYABE50	B38368	WO200061623-A1	Cancer
HSJAQ17	B38369	WO200061623-A1	Cancer
HCUGM86	B38370	WO200061623-A1	Immune/Hematopoietic
HLDQC46	B38371	WO200061623-A1	Cancer

HOFOA59	B38372	WO200061623-A1	Reproductive
HFABG18	B38373	WO200061623-A1	Cancer
HNHLY33	B38374	WO200061623-A1	Immune/Hematopoietic
HFCFJ18	B38375	WO200061623-A1	Cancer
HANGG89	B38376	WO200061623-A1	Cancer
HNHOD46	B38377	WO200061623-A1	Immune/Hematopoietic
HLYBI58	B38379	WO200061623-A1	Cancer
HAJBG14	B38381	WO200061623-A1	Cancer
HE9NN84	B38382	WO200061623-A1	Cancer
HAPSA79	B38383	WO200061623-A1	Cancer
HAPSA79	B38384	WO200061623-A1	Cancer
HTLEJ24	B38385	WO200061623-A1	Cancer
HEGAK44	B38386	WO200061623-A1	Cancer
HTXDO17	B38387	WO200061623-A1	Immune/Hematopoietic, Neural/Sensory, Respiratory
HBIBB20	B38388	WO200061623-A1	Cancer
HSIDL71	B38389	WO200061623-A1	Cancer
HOVBX78	B38390	WO200061623-A1	Cancer
HYABE50	B38391	WO200061623-A1	Cancer
HFCFJ18	B38392	WO200061623-A1	Cancer
HPRAL78	B38394	WO200061623-A1	Cancer
HCE5F84	B38395	WO200061623-A1	Cancer
HAMHE82	B38396	WO200061623-A1	Cancer
HACBZ59	B38472	WO200061623-A1	Cancer
HACBZ59	B38475	WO200061623-A1	Cancer
HWLQU40	B38514	WO200061623-A1	Cancer
HFKEI35	B38527	WO200056882-A1	Excretory
HFPCZ55	B38529	WO200056882-A1	Cancer
HFPDR39	B38533	WO200056882-A1	Cancer
HFPDX08	B38536	WO200056882-A1	Cancer
HFRAB10	B38539	WO200056882-A1	Excretory, Immune/Hematopoietic, Neural/Sensory
HFSBE94	B38541	WO200056882-A1	Immune/Hematopoietic
HFTAR30	B38545	WO200056882-A1	Cancer
HFTBB50	B38546	WO200056882-A1	Cancer
HFSAY91	B38551	WO200056882-A1	Cancer
HFSBC10	B38552	WO200056882-A1	Immune/Hematopoietic, Mixed Fetal
HFTDK11	B38555	WO200056882-A1	Cancer
HFVHW43	B38560	WO200056882-A1	Digestive
HFXXBI64	B38567	WO200056882-A1	Neural/Sensory
HFXXBL05	B38568	WO200056882-A1	Mixed Fetal, Neural/Sensory
HHGBV02	B38971	WO200056880-A1	Immune/Hematopoietic, Reproductive
HHGBW55	B38972	WO200056880-A1	Immune/Hematopoietic, Reproductive
HHGDI12	B38976	WO200056880-A1	Neural/Sensory
HHPBG90	B38983	WO200056880-A1	Cancer
HHPFP26	B38987	WO200056880-A1	Cancer
HHPGU74	B38990	WO200056880-A1	Neural/Sensory
HHPEB61	B38991	WO200056880-A1	Cancer
HHSEBJ92	B39002	WO200056880-A1	Cancer
HHPSE03	B39004	WO200056880-A1	Neural/Sensory

HHSCQ67	B39005	WO200056880-A1	Cancer
HHSD43	B39007	WO200056880-A1	Cancer
HHTLH79	B39015	WO200056880-A1	Immune/Hematopoietic, Musculoskeletal, Neural/Sensory
HIABC70	B39016	WO200056880-A1	Cancer
HIBCR82	B39017	WO200056880-A1	Mixed Fetal, Neural/Sensory
HIBEC45	B39019	WO200056880-A1	Cancer
HILCA24	B39020	WO200056880-A1	Digestive, Immune/Hematopoietic, Reproductive
HLHBS54	B39093	WO200058513-A1	Cancer
HLMCT95	B39098	WO200058513-A1	Cancer
HLDRU08	B39100	WO200058513-A1	Cancer
HLDXF43	B39101	WO200058513-A1	Cancer
HLEAA10	B39102	WO200058513-A1	Immune/Hematopoietic
HLHCB33	B39104	WO200058513-A1	Digestive, Reproductive, Respiratory
HLHCF14	B39105	WO200058513-A1	Connective/Epithelial, Respiratory
HLHCN51	B39107	WO200058513-A1	Digestive, Immune/Hematopoietic, Respiratory
HLHDM38	B39109	WO200058513-A1	Cancer
HLHEX62	B39111	WO200058513-A1	Excretory, Immune/Hematopoietic, Respiratory
HLHSG15	B39114	WO200058513-A1	Cancer
HLIBD74	B39117	WO200058513-A1	Digestive
HLICO10	B39120	WO200058513-A1	Cancer
HLJBI22	B39121	WO200058513-A1	Cancer
HLLAX95	B39123	WO200058513-A1	Immune/Hematopoietic
HLMBZ14	B39127	WO200058513-A1	Immune/Hematopoietic
HLMDH01	B39129	WO200058513-A1	Immune/Hematopoietic
HLMDU23	B39130	WO200058513-A1	Immune/Hematopoietic
HLMFU53	B39133	WO200058513-A1	Cancer
HLMHG68	B39135	WO200058513-A1	Cancer
HLMIM84	B39137	WO200058513-A1	Cancer
HLMIQ83	B39139	WO200058513-A1	Immune/Hematopoietic
HLDRT09	B39140	WO200058513-A1	Cancer
HE9EA10	B39181	WO200056754-A1	Cancer
HE6CS65	B39182	WO200056754-A1	Cancer
HE8BE20	B39190	WO200056754-A1	Cancer
HE8BT58	B39193	WO200056754-A1	Cancer
HE8CA13	B39195	WO200056754-A1	Cancer
HE8FC10	B39201	WO200056754-A1	Immune/Hematopoietic, Mixed Fetal, Reproductive
HE8FG24	B39202	WO200056754-A1	Cancer
HE8FL24	B39203	WO200056754-A1	Mixed Fetal
HE8MA27	B39204	WO200056754-A1	Cancer
HE8MG56	B39205	WO200056754-A1	Mixed Fetal
HE8QU21	B39208	WO200056754-A1	Immune/Hematopoietic, Mixed Fetal

HE8UX34	B39210	WO200056754-A1	Mixed Fetal
HE9CY05	B39216	WO200056754-A1	Mixed Fetal
HE9DG54	B39217	WO200056754-A1	Cancer
HE9DZ47	B39218	WO200056754-A1	Endocrine, Immune/Hematopoietic, Mixed Fetal
HE8EX86	B39226	WO200056754-A1	Cancer
HMEIH57	B39310	WO200057903-A2	Cardiovascular, Immune/Hematopoietic
HFEBA88	B39312	WO200057903-A2	Cancer
HMEKW44	B39317	WO200057903-A2	Cardiovascular, Immune/Hematopoietic, Neural/Sensory
HMELM75	B39318	WO200057903-A2	Cancer
HMIAC52	B39322	WO200057903-A2	Cancer
HMIAL39	B39325	WO200057903-A2	Cancer
HMIBD93	B39329	WO200057903-A2	Cancer
HMIBE95	B39330	WO200057903-A2	Neural/Sensory
HMMAL32	B39344	WO200057903-A2	Immune/Hematopoietic
HMMBK55	B39348	WO200057903-A2	Immune/Hematopoietic
HMMBR63	B39350	WO200057903-A2	Cancer
HMMBS55	B39351	WO200057903-A2	Immune/Hematopoietic, Reproductive
HMMBT47	B39352	WO200057903-A2	Immune/Hematopoietic
HMMCD35	B39353	WO200057903-A2	Immune/Hematopoietic
HFKCZ13	B39362	WO200057903-A2	Cancer
HFKCZ13	B39363	WO200057903-A2	Cancer
HOAAL10	B39402	WO200058340-A2	Musculoskeletal
HTXCV44	B39406	WO200058340-A2	Immune/Hematopoietic, Neural/Sensory
HTXDJ75	B39407	WO200058340-A2	Digestive, Immune/Hematopoietic, Mixed Fetal
HSIDZ25	B39410	WO200058340-A2	Cancer
HTXEN33	B39413	WO200058340-A2	Immune/Hematopoietic, Reproductive
HJPDK61	B39419	WO200058340-A2	Cancer
HNHBM16	B39420	WO200058340-A2	Immune/Hematopoietic, Neural/Sensory
HNHDE58	B39422	WO200058340-A2	Cancer
HTTDT67	B39425	WO200058340-A2	Cancer
HTLEP55	B39427	WO200058340-A2	Cancer
HCUBA28	B39430	WO200058340-A2	Cancer
HSNAT08	B39433	WO200058340-A2	Cancer
HTOEVO1	B39437	WO200058340-A2	Immune/Hematopoietic, Reproductive
HSQBF66	B39439	WO200058340-A2	Cancer
HSJBY32	B39445	WO200058340-A2	Immune/Hematopoietic, Musculoskeletal, Neural/Sensory
HPMCV30	B39447	WO200058340-A2	Cancer
HPMDF45	B39448	WO200058340-A2	Excretory, Immune/Hematopoietic, Reproductive
HPIBI40	B40153	WO200058496-A1	Cancer
HRDBA20	B40154	WO200058496-A1	Musculoskeletal

HTJMA64	B40156	WO200058496-A1	Cancer
HTHDF86	B40157	WO200058496-A1	Immune/Hematopoietic
HRDBA20	B40158	WO200058496-A1	Musculoskeletal
HSAAN03	B40161	WO200058496-A1	Cancer
HRABZ80	B40162	WO200058496-A1	Excretory, Immune/Hematopoietic, Musculoskeletal
HPDDQ28	B40163	WO200058496-A1	Endocrine, Musculoskeletal
HOSBX14	B40166	WO200058496-A1	Immune/Hematopoietic, Musculoskeletal, Reproductive
HCRAI29	B40168	WO200058496-A1	Neural/Sensory
HSAXI10	B40171	WO200058496-A1	Digestive, Immune/Hematopoietic
HTSFV18	B40172	WO200058496-A1	Cancer
HNHGK22	B40174	WO200058496-A1	Immune/Hematopoietic
HPMFP48	B40176	WO200058496-A1	Cancer
HUSGL67	B40177	WO200058496-A1	Cancer
HOFMO16	B40180	WO200058496-A1	Reproductive
HPMAI31	B40182	WO200058496-A1	Cancer
HTTAP37	B40184	WO200058496-A1	Immune/Hematopoietic, Reproductive
HSABA15	B40187	WO200058496-A1	Cancer
HPEAA65	B40188	WO200058496-A1	Digestive, Immune/Hematopoietic, Reproductive
HSSAN03	B40189	WO200058496-A1	Cancer
HTTDG27	B40194	WO200058496-A1	Reproductive
HTPDV75	B40195	WO200058496-A1	Digestive, Reproductive
HMJAC12	B40197	WO200058496-A1	Neural/Sensory
HTLEJ24	B40198	WO200058496-A1	Cancer
HBAMC47	B43415	WO200055350-A1	Excretory
HBGDH11	B43571	WO200055350-A1	Cancer
HCHAK72	B43572	WO200055350-A1	Cancer
HSRAB84	B43594	WO200055350-A1	Cancer
HMWBH91	B43612	WO200055350-A1	Cancer
HUFFG07	B43619	WO200055350-A1	Cancer
HMEIY69	B43625	WO200055350-A1	Cancer
HIBCN93	B43651	WO200055350-A1	Cancer
HDPQE64	B43656	WO200055350-A1	Cancer
HSYCY88	B43723	WO200055350-A1	Cancer
HCMSD61	B43779	WO200055350-A1	Cancer
H2CBK94	B43801	WO200055350-A1	Digestive, Neural/Sensory, Respiratory
HE9NK60	B43812	WO200055350-A1	Cancer
HTXDT74	B43844	WO200055350-A1	Cancer
HTTKN45	B43848	WO200055350-A1	Cancer
HSSGC06	B43861	WO200055350-A1	Cancer
HE8AM92	B43893	WO200055350-A1	Cancer
HWLHZ28	B43933	WO200055350-A1	Cancer
HCEDM42	B43935	WO200055350-A1	Cancer
HMWFM73	B43952	WO200055350-A1	Cancer
HCHBQ27	B44028	WO200055350-A1	Reproductive

HCHBQ27	B44029	WO200055350-A1	Reproductive
HCEGS49	B44338	WO200058358-A1	Connective/Epithelial, Neural/Sensory, Reproductive
HTODH57	B44349	WO200058358-A1	Immune/Hematopoietic
HRTAR24	B44351	WO200058358-A1	Digestive, Immune/Hematopoietic
HSLAW59	B44355	WO200058358-A1	Immune/Hematopoietic, Musculoskeletal
HODAG07	B44358	WO200058358-A1	Reproductive
HODBA45	B44360	WO200058358-A1	Reproductive
HODBD79	B44361	WO200058358-A1	Immune/Hematopoietic, Reproductive
HODDG72	B44363	WO200058358-A1	Cancer
HSVAE42	B44367	WO200058358-A1	Connective/Epithelial, Neural/Sensory
HNHAG83	B44369	WO200058358-A1	Immune/Hematopoietic, Mixed Fetal, Musculoskeletal
HSIDA39	B44374	WO200058358-A1	Digestive
HYBAW56	B44375	WO200058358-A1	Musculoskeletal
HSATI91	B44376	WO200058358-A1	Immune/Hematopoietic
HPWAO89	B44379	WO200058358-A1	Immune/Hematopoietic, Reproductive
HOUCD12	B44380	WO200058358-A1	Connective/Epithelial
HWTAM38	B44381	WO200058358-A1	Digestive, Immune/Hematopoietic, Reproductive
HKGCE62	B44597	WO200058339-A2	Immune/Hematopoietic
HKGAK45	B44601	WO200058339-A2	Musculoskeletal, Reproductive
HKGBC33	B44602	WO200058339-A2	Immune/Hematopoietic
HKGBH54	B44606	WO200058339-A2	Cancer
HKGCK41	B44608	WO200058339-A2	Cancer
HKG CX05	B44610	WO200058339-A2	Cancer
HKGDA95	B44611	WO200058339-A2	Cancer
HKIME53	B44612	WO200058339-A2	Cancer
HKIXR91	B44616	WO200058339-A2	Cancer
HKMLT89	B44625	WO200058339-A2	Excretory, Immune/Hematopoietic, Reproductive
HKMMU76	B44629	WO200058339-A2	Cancer
HL3AE69	B44635	WO200058339-A2	Cancer
HLDBV54	B44638	WO200058339-A2	Cancer
HLDNF18	B44639	WO200058339-A2	Cancer
HLDOL74	B44642	WO200058339-A2	Cancer
HKIMG23	B44643	WO200058339-A2	Cancer
HLDBV18	B44645	WO200058339-A2	Cancer
HMQBU44	B44647	WO200058339-A2	Cancer
HNHDM21	B44703	WO200058494-A1	Immune/Hematopoietic
HNHDM43	B44704	WO200058494-A1	Immune/Hematopoietic
HNHDX28	B44708	WO200058494-A1	Immune/Hematopoietic
HNHEG30	B44713	WO200058494-A1	Immune/Hematopoietic
HNHEL22	B44715	WO200058494-A1	Immune/Hematopoietic
HNHFF60	B44720	WO200058494-A1	Immune/Hematopoietic
HTHDH18	B44723	WO200058494-A1	Immune/Hematopoietic



HTHDP65	B44724	WO200058494-A1	Cancer
HTHDT25	B44725	WO200058494-A1	Immune/Hematopoietic
HTGAQ29	B44727	WO200058494-A1	Immune/Hematopoietic
HTGAS70	B44728	WO200058494-A1	Cancer
HNHGD95	B44731	WO200058494-A1	Cardiovascular, Immune/Hematopoietic
HNHGR82	B44733	WO200058494-A1	Immune/Hematopoietic
HSAYL24	B44763	WO200058336-A1	Immune/Hematopoietic
HTGDS92	B44764	WO200058336-A1	Cancer
HTWDJ17	B44767	WO200058336-A1	Cancer
HNGJL07	B44776	WO200058336-A1	Immune/Hematopoietic, Neural/Sensory
HSSGS62	B44785	WO200058336-A1	Musculoskeletal, Reproductive
HOVCC73	B44786	WO200058336-A1	Immune/Hematopoietic, Reproductive
HSAYO82	B44788	WO200058336-A1	Endocrine, Immune/Hematopoietic
HMACT74	B44791	WO200058336-A1	Immune/Hematopoietic
HMIAD75	B44792	WO200058336-A1	Neural/Sensory
HUFAO92	B44795	WO200058336-A1	Digestive, Reproductive
HTWFA21	B44799	WO200058336-A1	Immune/Hematopoietic
HSDKE82	B44802	WO200058336-A1	Neural/Sensory
HMAJS26	B44803	WO200058336-A1	Cancer
HKGAP57	B44811	WO200058336-A1	Immune/Hematopoietic
HCWUW24	B44831	WO200055176-A2	Immune/Hematopoietic
HDPAE80	B44832	WO200055176-A2	Cancer
HCUFE33	B44833	WO200055176-A2	Immune/Hematopoietic
HCUFJ09	B44834	WO200055176-A2	Cancer
HCUGR26	B44840	WO200055176-A2	Immune/Hematopoietic
HCUHM71	B44844	WO200055176-A2	Immune/Hematopoietic, Musculoskeletal
HCWAK88	B44847	WO200055176-A2	Immune/Hematopoietic
HCWFK03	B44855	WO200055176-A2	Cancer
HCWHT52	B44858	WO200055176-A2	Immune/Hematopoietic
HCWKO32	B44859	WO200055176-A2	Immune/Hematopoietic
HCWUF93	B44861	WO200055176-A2	Cancer
HDACJ52	B44865	WO200055176-A2	Cancer
HDFAB86	B44866	WO200055176-A2	Mixed Fetal, Neural/Sensory
HDHAA55	B44870	WO200055176-A2	Immune/Hematopoietic, Neural/Sensory
HDHEB12	B44871	WO200055176-A2	Immune/Hematopoietic, Neural/Sensory
HDHIA16	B44874	WO200055176-A2	Cancer
HDHIA26	B44875	WO200055176-A2	Neural/Sensory
HARNB17	B44909	WO200055176-A2	Cancer
HBKEE60	B44917	WO200055200-A1	Digestive
HBMWJ92	B44920	WO200055200-A1	Cancer
HBMXW83	B44924	WO200055200-A1	Cancer
HCE3R01	B44926	WO200055200-A1	Cancer
HBNBJ76	B44930	WO200055200-A1	Cancer
HBQAC72	B44935	WO200055200-A1	Neural/Sensory
HBSAJ63	B44937	WO200055200-A1	Cancer
HATDE03	B44938	WO200055200-A1	Cancer

HBSDD24	B44939	WO200055200-A1	Cancer
HBWBD25	B44940	WO200055200-A1	Immune/Hematopoietic, Neural/Sensory
HBXBM24	B44943	WO200055200-A1	Neural/Sensory
HBXBM78	B44944	WO200055200-A1	Cancer
HBNAX40	B44947	WO200055200-A1	Cancer
HBXCQ03	B44949	WO200055200-A1	Cancer
HBXFI33	B44955	WO200055200-A1	Immune/Hematopoietic, Neural/Sensory
HBXGE12	B44958	WO200055200-A1	Cancer
HCDAA24	B44960	WO200055200-A1	Cancer
HCDAH02	B44962	WO200055200-A1	Immune/Hematopoietic, Musculoskeletal
HCDAR40	B44964	WO200055200-A1	Cardiovascular, Immune/Hematopoietic, Musculoskeletal
HCDBE76	B44965	WO200055200-A1	Cancer
HCDBO32	B44966	WO200055200-A1	Cancer
HTDAF68	B45025	WO200058357-A1	Immune/Hematopoietic
HTWFA88	B45027	WO200058357-A1	Digestive, Immune/Hematopoietic
HSDJV40	B45028	WO200058357-A1	Immune/Hematopoietic, Neural/Sensory
HSDKA64	B45029	WO200058357-A1	Immune/Hematopoietic, Neural/Sensory
HRAAC36	B45030	WO200058357-A1	Excretory, Immune/Hematopoietic
HPRCF50	B45031	WO200058357-A1	Cancer
HUSXP50	B45034	WO200058357-A1	Cardiovascular, Reproductive
HSSFP88	B45035	WO200058357-A1	Cancer
HOVBS68	B45037	WO200058357-A1	Cancer
HOVCO53	B45039	WO200058357-A1	Reproductive
HOVBI16	B45040	WO200058357-A1	Cancer
HOSFR35	B45041	WO200058357-A1	Cancer
HNTRB25	B45042	WO200058357-A1	Cancer
HUFBP77	B45043	WO200058357-A1	Cancer
HUFAP33	B45044	WO200058357-A1	Cancer
HSDHD05	B45045	WO200058357-A1	Neural/Sensory
HTWFM85	B45046	WO200058357-A1	Cancer
HSDJC96	B45048	WO200058357-A1	Cancer
HTXKH40	B45050	WO200058357-A1	Cancer
HPQCI62	B45051	WO200058357-A1	Cancer
HOFMJ65	B45053	WO200058357-A1	Cancer
HMUAN45	B45057	WO200058357-A1	Cancer
HAJAB88	B45059	WO200058357-A1	Cancer
HPTTT62	B45067	WO200058357-A1	Cancer
HSRDW57	B45071	WO200058357-A1	Cancer
HSRDW57	B45118	WO200058357-A1	Cancer
HJBCG74	B45121	WO200058467-A1	Cancer
HCECO77	B45124	WO200058467-A1	Cancer
HJABC58	B45129	WO200058467-A1	Cancer
HJMBK59	B45140	WO200058467-A1	Cancer
HJMBP01	B45141	WO200058467-A1	Cancer
HJMBW62	B45143	WO200058467-A1	Reproductive
HJPAQ19	B45146	WO200058467-A1	Cancer

HJPBN96	B45148	WO200058467-A1	Cancer
HJPBK28	B45149	WO200058467-A1	Cancer
HKABN63	B45152	WO200058467-A1	Cancer
HKAFF50	B45159	WO200058467-A1	Cancer
HKMSB01	B45166	WO200058467-A1	Cancer
HISEJ52	B45171	WO200058467-A1	Cancer
HJBCG74	B45174	WO200058467-A1	Cancer
HJBCG74	B45175	WO200058467-A1	Cancer
HOFNY15	B45227	WO200063230-A2	Reproductive
HNTAF42	B45228	WO200063230-A2	Cancer
HPJAW78	B45233	WO200063230-A2	Immune/Hematopoietic, Musculoskeletal, Reproductive
HPJBS16	B45234	WO200063230-A2	Connective/Epithelial, Reproductive
HPJCV35	B45236	WO200063230-A2	Reproductive
HSNAH56	B45239	WO200063230-A2	Cancer
HE2FE89	B45246	WO200063230-A2	Cardiovascular, Digestive, Mixed Fetal
HPVAF86	B45249	WO200063230-A2	Reproductive
HOGCD78	B45257	WO200063230-A2	Reproductive
HRABU56	B45264	WO200063230-A2	Cardiovascular, Excretory, Musculoskeletal
HCUBY47	B45267	WO200063230-A2	Digestive, Immune/Hematopoietic
HUDBE20	B45270	WO200063230-A2	Reproductive
HUDBK47	B45271	WO200063230-A2	Immune/Hematopoietic, Reproductive
HSOAH16	B45318	WO200061628-A1	Digestive
HWTBX66	B45320	WO200061628-A1	Cancer
HTXDO17	B45321	WO200061628-A1	Immune/Hematopoietic, Neural/Sensory, Respiratory
HSSDQ20	B45325	WO200061628-A1	Musculoskeletal, Neural/Sensory
HTOHM82	B45329	WO200061628-A1	Cancer
HTOIH51	B45333	WO200061628-A1	Immune/Hematopoietic
HHLBA86	B45334	WO200061628-A1	Digestive
HTAEH58	B45335	WO200061628-A1	Immune/Hematopoietic
HLTCO22	B45338	WO200061628-A1	Cancer
HTOJS23	B45343	WO200061628-A1	Immune/Hematopoietic
HNHBE21	B45356	WO200061628-A1	Immune/Hematopoietic
HSSF38	B45387	WO200061627-A1	Cancer
HTOGB79	B45388	WO200061627-A1	Cancer
HKABU43	B45389	WO200061627-A1	Cancer
HSYBV44	B45398	WO200061627-A1	Immune/Hematopoietic
HOHBZ10	B45399	WO200061627-A1	Cancer
HWAAQ28	B45400	WO200061627-A1	Cancer
HWBBQ70	B45402	WO200061627-A1	Immune/Hematopoietic, Neural/Sensory
HWBCN36	B45403	WO200061627-A1	Immune/Hematopoietic
HWBCP16	B45404	WO200061627-A1	Immune/Hematopoietic
HWHGW09	B45406	WO200061627-A1	Cancer
HWHHA21	B45407	WO200061627-A1	Connective/Epithelial

HYABE50	B45408	WO200061627-A1	Cancer
HBXFA04	B45411	WO200061627-A1	Neural/Sensory
HPRCA64	B45412	WO200061627-A1	Cancer
HTXAA20	B45414	WO200061627-A1	Cancer
HOFAA78	B45423	WO200061627-A1	Reproductive
HTOGR38	B45427	WO200061627-A1	Immune/Hematopoietic
HUKBT67	B45431	WO200061627-A1	Cancer
HCEMU42	B45432	WO200061627-A1	Cancer
HWHPB78	B45433	WO200061627-A1	Cancer
HSYBV44	B45452	WO200061627-A1	Immune/Hematopoietic
HNHEN70	B45699	WO200071584-A1	Cancer
HLYBN81	B45700	WO200071584-A1	Cancer
H7TME50	B45701	WO200071584-A1	Cancer
HDPWP65	B45702	WO200071584-A1	Cancer
HDTIE58	B45703	WO200071584-A1	Cardiovascular, Connective/Epithelial, Immune/Hematopoietic
H7TPC96	B45704	WO200071584-A1	Cancer
H7MAD52	B45705	WO200071584-A1	Reproductive
HYASC03	B49502	WO200070076-A1	Endocrine, Immune/Hematopoietic
HCE1K90	B49503	WO200070076-A1	Cancer
HNTMH2C	B49504	WO200070076-A1	Cancer
HE8EJ16	B49505	WO200070076-A1	Mixed Fetal, Neural/Sensory, Reproductive
HFEBD57	B49506	WO200070076-A1	Cancer
HOFAD65	B49507	WO200070076-A1	Cancer
HAPRB43	B49508	WO200070076-A1	Cancer
HCE1K90	B49509	WO200070076-A1	Cancer
HE8EJ16	B49510	WO200070076-A1	Mixed Fetal, Neural/Sensory, Reproductive
HFEBD57	B49511	WO200070076-A1	Cancer
HFEBD57	B49512	WO200070076-A1	Cancer
HOFAD65	B49513	WO200070076-A1	Cancer
HFPEY75	B49533	WO200061774-A2	Cancer
HOHEC84	B49534	WO200061774-A2	Immune/Hematopoietic, Musculoskeletal
HFKCD20	B49535	WO200061774-A2	Cancer
HKMLR17	B49536	WO200061774-A2	Cancer
HTHCW70	B49537	WO200061774-A2	Cancer
HOHEC84	B49538	WO200061774-A2	Immune/Hematopoietic, Musculoskeletal
HOUCQ17	B50011	WO200071577-A1	Cancer
HMADD44	B50378	WO200061614-A2	Cancer
HDQER52	B50379	WO200061614-A2	Cancer
HTELM46	B50380	WO200061614-A2	Digestive, Immune/Hematopoietic, Reproductive
HDPUS73	B50381	WO200061614-A2	Cancer
HFCDT50	B50382	WO200061614-A2	Cancer
HEMGR64	B50383	WO200061614-A2	Cancer
HHFDM26	B50384	WO200061614-A2	Cancer
HTTIA36	B50385	WO200061614-A2	Cancer
HDQHP22	B50387	WO200061614-A2	Cancer

HRDCD90	B50388	WO200061614-A2	Cancer
HEOMG91	B50389	WO200061614-A2	Cancer
HSLGK66	B50390	WO200061614-A2	Cancer
HSIFX64	B50391	WO200061614-A2	Cancer
HETCD80	B50392	WO200061614-A2	Reproductive
HHSGB09	B50393	WO200061614-A2	Cancer
HLWBT44	B50394	WO200061614-A2	Cancer
HTLJG95	B50395	WO200061614-A2	Cancer
HDPDH32	B50935	WO200073323-A2	Immune/Hematopoietic
HHFMQ22	B50936	WO200073323-A2	Cancer
HETCM67	B50937	WO200073323-A2	Cancer
HWBDU78	B50938	WO200073323-A2	Cancer
HTXEM16	B50939	WO200073323-A2	Cancer
HBJEM23	B50940	WO200073323-A2	Cardiovascular, Musculoskeletal, Reproductive
H7TMD22	B50941	WO200073323-A2	Neural/Sensory
HDPDH32	B50942	WO200073323-A2	Immune/Hematopoietic
HDPDH32	B50943	WO200073323-A2	Immune/Hematopoietic
HSQAX94	B51382	WO200058495-A1	Cancer
HTOFA11	B51383	WO200058495-A1	Cancer
HFFAH01	B51384	WO200058495-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HNHBI65	B51385	WO200058495-A1	Immune/Hematopoietic
HNHCP14	B51386	WO200058495-A1	Immune/Hematopoietic
HEAAW54	B51387	WO200058495-A1	Reproductive
HSRDM56	B51393	WO200058495-A1	Cancer
HSAXL82	B51397	WO200058495-A1	Immune/Hematopoietic
HCE3L04	B51398	WO200058495-A1	Neural/Sensory
HEBGM06	B51402	WO200058495-A1	Cancer
HTWBO30	B51403	WO200058495-A1	Cancer
HSSJF26	B51404	WO200058495-A1	Musculoskeletal
HUKAD46	B51412	WO200058495-A1	Endocrine, Immune/Hematopoietic, Reproductive
HPDDT14	B51413	WO200058495-A1	Cancer
HTEDF78	B51415	WO200058495-A1	Reproductive
HSUSB73	B51416	WO200058495-A1	Immune/Hematopoietic, Reproductive
HSRAA81	B51417	WO200058495-A1	Cancer
HCABW10	B51420	WO200058495-A1	Cancer
HTWAM19	B51422	WO200058495-A1	Immune/Hematopoietic
HSDZO08	B51620	WO200061620-A1	Cancer
HSLHX15	B51624	WO200061620-A1	Musculoskeletal
HSNBM34	B51625	WO200061620-A1	Digestive
HSWBE76	B51629	WO200061620-A1	Cancer
HSXAS59	B51630	WO200061620-A1	Neural/Sensory
HSXAY60	B51631	WO200061620-A1	Cancer
HTEDX07	B51635	WO200061620-A1	Cancer
HTEJY20	B51640	WO200061620-A1	Cancer
HLDQU79	B51645	WO200061620-A1	Cancer
HTLBT80	B51646	WO200061620-A1	Cancer
HTEAF65	B51648	WO200061620-A1	Excretory, Reproductive
HTNBJ15	B51649	WO200061620-A1	Cancer

HOU EP77	B51650	WO200061620-A1	Cancer
HTOJL95	B51651	WO200061620-A1	Cancer
HTTDN24	B51653	WO200061620-A1	Cancer
HTXAD75	B51655	WO200061620-A1	Cancer
HTXDJ21	B51657	WO200061620-A1	Immune/Hematopoietic
HKB1E57	B51658	WO200061620-A1	Cancer
HAQBZ15	B51659	WO200061620-A1	Cancer
HMWAB92	B51661	WO200061620-A1	Cancer
HSNBL85	B51663	WO200061620-A1	Cancer
HWBDJ08	B51664	WO200061620-A1	Cancer
HYABC84	B51667	WO200061620-A1	Cancer
HTEDX07	B51682	WO200061620-A1	Cancer
HOUHQ36	B51724	WO200061625-A1	Connective/Epithelial
HOUIG92	B51726	WO200061625-A1	Cancer
HSAZP90	B51728	WO200061625-A1	Immune/Hematopoietic
HSPAY90	B51730	WO200061625-A1	Cancer
HWHPU44	B51731	WO200061625-A1	Connective/Epithelial
HWACZ33	B51734	WO200061625-A1	Digestive, Immune/Hematopoietic, Reproductive
HRADA42	B51736	WO200061625-A1	Cancer
HRADN25	B51737	WO200061625-A1	Cancer
HRADN25	B51738	WO200061625-A1	Cancer
HRADT25	B51739	WO200061625-A1	Digestive, Excretory
HRADT25	B51740	WO200061625-A1	Digestive, Excretory
HOHEC84	B51741	WO200061625-A1	Immune/Hematopoietic, Musculoskeletal
HRADU15	B51742	WO200061625-A1	Excretory
HWDAG96	B51743	WO200061625-A1	Cancer
HWD AJ01	B51745	WO200061625-A1	Connective/Epithelial
HMB SF85	B51749	WO200061625-A1	Cancer
HRGSE38	B51752	WO200061625-A1	Cancer
HTLBF46	B51755	WO200061625-A1	Cancer
HSRHB59	B51761	WO200061625-A1	Cancer
HRDDQ39	B51762	WO200061625-A1	Cancer
HJPCH08	B51766	WO200061625-A1	Cancer
HOEBJ70	B51767	WO200061625-A1	Cancer
HDQER52	B51795	WO200061625-A1	Cancer
HTLBF63	B51827	WO200061626-A1	Cancer
HTOAT56	B51828	WO200061626-A1	Cancer
HSSMY35	B51829	WO200061626-A1	Cancer
HBHAA81	B51840	WO200061626-A1	Cancer
HOQBG21	B51841	WO200061626-A1	Cancer
HTPCG10	B51842	WO200061626-A1	Cancer
HS HAX04	B51848	WO200061626-A1	Cancer
HPEAD23	B51850	WO200061626-A1	Cancer
HODDN21	B51857	WO200061626-A1	Reproductive
HOABH36	B51859	WO200061626-A1	Cancer
HOACG07	B51860	WO200061626-A1	Cancer
HPMDA80	B51864	WO200061626-A1	Cancer
HSK CQ51	B51865	WO200061626-A1	Cancer
HRDDS22	B51870	WO200061626-A1	Cancer
HTXDT72	B51871	WO200061626-A1	Cancer

HTXDG92	B51873	WO200061626-A1	Cancer
HTXES13	B51874	WO200061626-A1	Cancer
HSSEF77	B51875	WO200061626-A1	Cancer
HTEGH03	B51883	WO200061626-A1	Cancer
HLMJB64	B51933	WO200058334-A1	Cancer
HLMNA19	B51936	WO200058334-A1	Cardiovascular, Immune/Hematopoietic
HLQAM30	B51937	WO200058334-A1	Cancer
HLQCX36	B51942	WO200058334-A1	Digestive
HLQCY09	B51943	WO200058334-A1	Digestive
HLQDM47	B51947	WO200058334-A1	Digestive
HLQDU77	B51948	WO200058334-A1	Cancer
HLTDA14	B51952	WO200058334-A1	Immune/Hematopoietic
HLTDK30	B51955	WO200058334-A1	Cancer
HLTDX04	B51958	WO200058334-A1	Cancer
HLWAU42	B51964	WO200058334-A1	Cancer
HLWAW73	B51965	WO200058334-A1	Cancer
HLWAX50	B51966	WO200058334-A1	Cancer
HLWBJ93	B51968	WO200058334-A1	Cancer
HLWCN37	B51970	WO200058334-A1	Cancer
HL YAL28	B51975	WO200058334-A1	Immune/Hematopoietic
HFXDR47	B52012	WO200061596-A1	Cancer
HNHHB10	B52017	WO200061596-A1	Immune/Hematopoietic, Reproductive
HPTRI42	B52019	WO200061596-A1	Cancer
HTWCE14	B52020	WO200061596-A1	Cancer
HPTVH59	B52025	WO200061596-A1	Endocrine, Neural/Sensory
HUSGU40	B52027	WO200061596-A1	Cancer
HUSYG26	B52028	WO200061596-A1	Cancer
HOVCJ71	B52029	WO200061596-A1	Reproductive
HSKYR49	B52034	WO200061596-A1	Cancer
HTWEG06	B52040	WO200061596-A1	Immune/Hematopoietic
HSDJF04	B52041	WO200061596-A1	Cancer
HPQAN50	B52044	WO200061596-A1	Reproductive
HT5FX76	B52051	WO200061596-A1	Cancer
HT5FX79	B52052	WO200061596-A1	Cancer
HNTRQ40	B52053	WO200061596-A1	Cancer
HOUFS04	B52057	WO200061596-A1	Cancer
HOGAR71	B52059	WO200061596-A1	Cancer
HOFNB74	B52060	WO200061596-A1	Reproductive
HOGAR71	B52101	WO200061596-A1	Cancer
H7TDB54	B52104	WO200061624-A1	Cancer
HOSEM81	B52105	WO200061624-A1	Cancer
HTXKF95	B52108	WO200061624-A1	Cancer
HTGGM44	B52113	WO200061624-A1	Immune/Hematopoietic, Musculoskeletal
HROBJ10	B52114	WO200061624-A1	Cancer
HTXLC05	B52118	WO200061624-A1	Digestive, Immune/Hematopoietic, Respiratory
HTXLC45	B52119	WO200061624-A1	Immune/Hematopoietic
HNHLD80	B52120	WO200061624-A1	Immune/Hematopoietic
HNGKT41	B52124	WO200061624-A1	Immune/Hematopoietic
HNHMP15	B52125	WO200061624-A1	Immune/Hematopoietic
HNHMY76	B52127	WO200061624-A1	Immune/Hematopoietic,

			Reproductive
HNHND14	B52129	WO200061624-A1	Immune/Hematopoietic
HNHOF09	B52131	WO200061624-A1	Immune/Hematopoietic
HODEM38	B52132	WO200061624-A1	Digestive, Immune/Hematopoietic, Reproductive
HNGMW45	B52137	WO200061624-A1	Immune/Hematopoietic
HNGNK44	B52139	WO200061624-A1	Immune/Hematopoietic
HTLGL33	B52145	WO200061624-A1	Reproductive
HTLGY50	B52146	WO200061624-A1	Cancer
HNGKY94	B52147	WO200061624-A1	Immune/Hematopoietic
HTXNV66	B52150	WO200061624-A1	Cancer
HRODG74	B53274	WO200055351-A1	Cancer
HTTDO45	B53323	WO200055351-A1	Cancer
HSIFY77	B53335	WO200055351-A1	Cancer
HWMIW26	B53358	WO200055351-A1	Cancer
HEAHA84	B53397	WO200055351-A1	Cancer
HBKDN33	B53414	WO200055351-A1	Cancer
HKAIL83	B53430	WO200055351-A1	Cancer
HBMSK08	B53503	WO200055351-A1	Cancer
HTELE03	B53617	WO200055351-A1	Cancer
HSWAR63	B53774	WO200055351-A1	Reproductive
HFXAM85	B54142	WO200055320-A1	Cancer
HISCO10	B54185	WO200055320-A1	Digestive
HISBT02	B54226	WO200055320-A1	Digestive
HNHLV34	B54251	WO200055320-A1	Cancer
HUSXO71	B54257	WO200055320-A1	Cardiovascular, Immune/Hematopoietic, Reproductive
HLWBY67	B54277	WO200055320-A1	Cancer
HUVDP63	B54282	WO200055320-A1	Cancer
HSTAH26	B54290	WO200055320-A1	Connective/Epithelial
HWLXE16	B54305	WO200055320-A1	Digestive
HDQEG93	B54316	WO200055320-A1	Cancer
HSLJG12	B54341	WO200055320-A1	Cancer
HAOSL81	B54358	WO200055320-A1	Cancer
HOFNH33	B54374	WO200055320-A1	Reproductive
HAJBV26	B56077	WO200070042-A1	Cancer
HAPOC74	B56078	WO200070042-A1	Excretory, Immune/Hematopoietic, Reproductive
HATEI47	B56079	WO200070042-A1	Endocrine
HNHGD15	B56080	WO200070042-A1	Immune/Hematopoietic
HRKAB52	B56081	WO200070042-A1	Cancer
HKGAT94	B56082	WO200070042-A1	Digestive, Reproductive
HODAH46	B56083	WO200070042-A1	Cancer
HASCE69	B56084	WO200070042-A1	Cancer
HBNBE21	B56085	WO200070042-A1	Cancer
HFLSH80	B56086	WO200070042-A1	Cancer
HRACM44	B56087	WO200070042-A1	Excretory, Immune/Hematopoietic
HBXFR04	B56090	WO200070042-A1	Neural/Sensory
HNHFM14	B56094	WO200070042-A1	Cancer
HEBCM27	B56095	WO200070042-A1	Cancer
HNHBM80	B56096	WO200070042-A1	Immune/Hematopoietic



			Reproductive
HTEAR66	B56098	WO200070042-A1	Reproductive
HTLDW38	B56099	WO200070042-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HTOFD28	B56100	WO200070042-A1	Immune/Hematopoietic
HFPBW41	B56101	WO200070042-A1	Neural/Sensory
HTSAC80	B56102	WO200070042-A1	Cancer
HANGD45	B56103	WO200070042-A1	Musculoskeletal
HNGJL11	B56106	WO200070042-A1	Immune/Hematopoietic, Musculoskeletal
HYBBE75	B56108	WO200070042-A1	Musculoskeletal
HCWDS72	B56109	WO200070042-A1	Cancer
HKPAD17	B56110	WO200070042-A1	Excretory
HTLGY87	B56114	WO200070042-A1	Cancer
HULAG01	B56115	WO200070042-A1	Cardiovascular
HYAAJ71	B56116	WO200070042-A1	Immune/Hematopoietic
HE9HY07	B56118	WO200070042-A1	Mixed Fetal, Reproductive
HLSAF81	B56121	WO200070042-A1	Cancer
HNGAU09	B56123	WO200070042-A1	Immune/Hematopoietic
HTEID16	B56124	WO200070042-A1	Reproductive
HTWKE60	B56125	WO200070042-A1	Immune/Hematopoietic
HHLAB61	B56127	WO200070042-A1	Digestive
HRLMB56	B56128	WO200070042-A1	Cancer
HCUDW10	B56131	WO200070042-A1	Cancer
HNGIQ46	B56133	WO200070042-A1	Immune/Hematopoietic
H7TMD22	B56135	WO200070042-A1	Neural/Sensory
HHFCJ31	B56136	WO200070042-A1	Cardiovascular, Connective/Epithelial, Reproductive
HLDBW08	B56137	WO200070042-A1	Digestive
H6EEW15	B56139	WO200070042-A1	Cancer
HNHBM26	B56142	WO200070042-A1	Immune/Hematopoietic, Reproductive
HFIVA74	B56144	WO200070042-A1	Musculoskeletal, Reproductive
HPWAG46	B56145	WO200070042-A1	Cancer
HBJFM34	B56146	WO200070042-A1	Immune/Hematopoietic
HRDDS01	B56147	WO200070042-A1	Musculoskeletal
HGBDH53	B56152	WO200070042-A1	Cancer
HMKCV28	B56154	WO200070042-A1	Neural/Sensory
HPLAT69	B56155	WO200070042-A1	Cancer
HNGBJ27	B56157	WO200070042-A1	Immune/Hematopoietic
HFXHO83	B56158	WO200070042-A1	Cancer
HKGAM07	B56159	WO200070042-A1	Digestive, Endocrine
HTXFE73	B56160	WO200070042-A1	Cancer
HEBBN36	B56163	WO200070042-A1	Cancer
HJPCY06	B56164	WO200070042-A1	Cancer
HTEGS19	B56165	WO200070042-A1	Cancer
HMJAK63	B56166	WO200070042-A1	Neural/Sensory
HNHGE75	B56170	WO200070042-A1	Immune/Hematopoietic
HMELA16	B56171	WO200070042-A1	Cardiovascular, Immune/Hematopoietic
HNGAJ15	B56172	WO200070042-A1	Immune/Hematopoietic,

			Neural/Sensory
HNHHD40	B56173	WO200070042-A1	Cancer
HFPA06	B56177	WO200070042-A1	Cancer
HNGIH43	B56180	WO200070042-A1	Immune/Hematopoietic, Reproductive
HLSAD65	B56182	WO200070042-A1	Cancer
HMDAK33	B56183	WO200070042-A1	Neural/Sensory
HNALC70	B56184	WO200070042-A1	Cancer
HOUCW42	B56185	WO200070042-A1	Connective/Epithelial
HLMMX46	B56186	WO200070042-A1	Immune/Hematopoietic
HHSDI68	B56188	WO200070042-A1	Neural/Sensory
HLMIV11	B56190	WO200070042-A1	Immune/Hematopoietic
HBMCI50	B56193	WO200070042-A1	Immune/Hematopoietic
HCRAI47	B56195	WO200070042-A1	Cancer
HNHEU34	B56198	WO200070042-A1	Immune/Hematopoietic
HPFCR15	B56199	WO200070042-A1	Digestive, Mixed Fetal, Reproductive
HNGJM27	B56201	WO200070042-A1	Immune/Hematopoietic
HNHEL19	B56202	WO200070042-A1	Immune/Hematopoietic, Reproductive
HGOCD38	B56204	WO200070042-A1	Cancer
HHGCG53	B56205	WO200070042-A1	Cancer
HHSBJ93	B56206	WO200070042-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HLHDS79	B56208	WO200070042-A1	Cancer
HNHEA64	B56209	WO200070042-A1	Immune/Hematopoietic
HOVAZ13	B56211	WO200070042-A1	Cancer
HHGBK24	B56214	WO200070042-A1	Cancer
HILCG67	B56215	WO200070042-A1	Cancer
HOSFC36	B56218	WO200070042-A1	Cancer
HKGAT94	B56220	WO200070042-A1	Digestive, Reproductive
HBNBE21	B56221	WO200070042-A1	Cancer
HFLSH80	B56222	WO200070042-A1	Cancer
HGBDH53	B56227	WO200070042-A1	Cancer
HMELA16	B56230	WO200070042-A1	Cardiovascular, Immune/Hematopoietic
HNGAJ15	B56231	WO200070042-A1	Immune/Hematopoietic, Neural/Sensory
HCRAI47	B56232	WO200070042-A1	Cancer
HNHEL19	B56233	WO200070042-A1	Immune/Hematopoietic, Reproductive
HOSFC36	B56236	WO200070042-A1	Cancer
HHSBJ93	B56351	WO200070042-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HJAAT54	B56364	WO200055174-A1	Cancer
HPCQS73	B56431	WO200055174-A1	Cancer
HPRTL26	B56435	WO200055174-A1	Reproductive
HPFEA08	B56518	WO200055174-A1	Reproductive
HTEPF49	B56536	WO200055174-A1	Cancer
HOFAC67	B56601	WO200055174-A1	Reproductive
HNTBH70	B56606	WO200055174-A1	Cancer
HMQAI69	B56630	WO200055174-A1	Cancer

HDPBI36	B56671	WO200055174-A1	Cancer
HL2AH06	B56687	WO200055174-A1	Immune/Hematopoietic
HHEPI21	B56725	WO200055174-A1	Cancer
HAIBC14	B56739	WO200055174-A1	Cancer
HDQGM08	B56749	WO200055174-A1	Cancer
HWHPD31	B56788	WO200055174-A1	Cancer
HPJCY94	B56791	WO200055174-A1	Musculoskeletal, Reproductive
HDSAK19	B56816	WO200055174-A1	Cancer
HTTFG83	B56820	WO200055174-A1	Reproductive
HDPVR90	B56824	WO200055174-A1	Cancer
HSLJW05	B56860	WO200055174-A1	Cancer
HHEPE84	B56876	WO200055174-A1	Cancer
HE2LW65	B56909	WO200055174-A1	Cancer
HPRTI79	B56925	WO200055174-A1	Cancer
HEQAN39	B56926	WO200055174-A1	Cancer
HEMFC70	B56931	WO200055174-A1	Cancer
HELGM94	B56937	WO200055174-A1	Cancer
HDHMB78	B56950	WO200055174-A1	Cancer
HDPQE64	B56987	WO200055174-A1	Cancer
HDPBQ32	B56996	WO200055174-A1	Cancer
HBXGB85	B57056	WO200055174-A1	Neural/Sensory
HBUAC02	B57061	WO200055174-A1	Cancer
HOCOT88	B57077	WO200055174-A1	Cancer
HAJAT72	B57101	WO200055174-A1	Reproductive
HPJAV43	B57106	WO200055174-A1	Immune/Hematopoietic, Reproductive, Respiratory
HRODJ79	B57121	WO200055174-A1	Cancer
HE8FD92	B57128	WO200055174-A1	Cancer
HETAM53	B57137	WO200055174-A1	Cancer
HCHBQ27	B57159	WO200055174-A1	Reproductive
HAPSG03	B58194	WO200055180-A2	Cancer
HHFFR04	B58240	WO200055180-A2	Cancer
HCLSC85	B58320	WO200055180-A2	Respiratory
HPAMC60	B58368	WO200055180-A2	Cancer
HCE5E24	B58386	WO200055180-A2	Cancer
HMADJ17	B58396	WO200055180-A2	Cancer
HADCL25	B58403	WO200055180-A2	Cancer
HWDAO40	B58434	WO200055180-A2	Cancer
HRGBG45	B58718	WO200055173-A1	Cancer
HOFMM27	B58772	WO200055173-A1	Reproductive
HOFMH95	B58829	WO200055173-A1	Reproductive
HEMFK40	B58912	WO200055173-A1	Cancer
HODBC01	B58913	WO200055173-A1	Reproductive
HOGAV29	B58914	WO200055173-A1	Immune/Hematopoietic, Reproductive
HOFNL25	B58917	WO200055173-A1	Reproductive
HOFMH12	B58929	WO200055173-A1	Reproductive
HOFOC33	B58932	WO200055173-A1	Reproductive
HSIFL06	B58996	WO200055173-A1	Cancer
HNHBE38	B59469	WO200077173-A1	Cancer
HOPBP13	B59470	WO200077173-A1	Cancer
HOUDE92	B59472	WO200077173-A1	Cancer
HPQAJ27	B59473	WO200077173-A1	Cancer

HTLEV48	B59476	WO200077173-A1	Reproductive
HSPA120	B59478	WO200077173-A1	Digestive, Neural/Sensory
HSPAA89	B59479	WO200077173-A1	Digestive
HTWEH94	B59482	WO200077173-A1	Immune/Hematopoietic
HTEGS48	B59490	WO200077173-A1	Reproductive
HTEIV65	B59491	WO200077173-A1	Reproductive
HOSEI81	B59494	WO200077173-A1	Digestive, Musculoskeletal
HOEFL74	B59495	WO200077173-A1	Cardiovascular, Digestive, Musculoskeletal
HOGAA41	B59497	WO200077173-A1	Cancer
HOFMT59	B59499	WO200077173-A1	Reproductive
HSYBD33	B59502	WO200077173-A1	Immune/Hematopoietic
HTOHO21	B59503	WO200077173-A1	Immune/Hematopoietic
HTAED89	B59504	WO200077173-A1	Immune/Hematopoietic
HUSCA09	B60703	WO200076531-A1	Cancer
HBXCD59	B60705	WO200076531-A1	Immune/Hematopoietic, Neural/Sensory
HDPSZ07	B60706	WO200076531-A1	Immune/Hematopoietic
HCLCU75	B60712	WO200076531-A1	Respiratory
HDABR74	B60714	WO200076531-A1	Cancer
HSSEA64	B60721	WO200076531-A1	Cancer
HSSJF96	B60722	WO200076531-A1	Musculoskeletal
HT4FV41	B60724	WO200076531-A1	Cancer
HBSAJ63	B60725	WO200076531-A1	Cancer
HTODA92	B60726	WO200076531-A1	Cancer
HTTCB60	B60727	WO200076531-A1	Cancer
HTTEO25	B60728	WO200076531-A1	Cancer
HTXDD61	B60733	WO200076531-A1	Cancer
HTXJM94	B60734	WO200076531-A1	Cancer
HWHRC51	B60736	WO200076531-A1	Cancer
HAGFJ67	B60737	WO200076531-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HBSAK32	B60739	WO200076531-A1	Cancer
HCHCG33	B60741	WO200076531-A1	Cancer
HE8FD92	B60747	WO200076531-A1	Cancer
HSAWB58	B63049	WO200061748-A1	Immune/Hematopoietic
HCB1T53	B63050	WO200061748-A1	Neural/Sensory
HODCY44	B63057	WO200061748-A1	Reproductive
HTEJF31	B63072	WO200061748-A1	Reproductive
HTPCW21	B63077	WO200061748-A1	Digestive, Neural/Sensory
HPFBA54	B63082	WO200061748-A1	Reproductive
HSABG81	B63083	WO200061748-A1	Cancer
HTECB02	B63084	WO200061748-A1	Cancer
HTEDJ28	B63086	WO200061748-A1	Cancer
HSLEC18	B63092	WO200061748-A1	Cancer
HTSGO13	B63095	WO200061748-A1	Cancer
HTLEM16	B63096	WO200061748-A1	Cancer
HTXPD86	B63136	WO200061629-A1	Cancer
HWLGP26	B63137	WO200061629-A1	Cancer
HAJAY92	B63141	WO200061629-A1	Cancer
HSYBZ94	B63145	WO200061629-A1	Cancer

HPRBH85	B63146	WO200061629-A1	Cancer
HTECE87	B63147	WO200061629-A1	Cancer
HNHGD95	B63148	WO200061629-A1	Cardiovascular, Immune/Hematopoietic
HNKAA76	B63150	WO200061629-A1	Cancer
HOABP31	B63152	WO200061629-A1	Cancer
HOHBC57	B63154	WO200061629-A1	Cancer
HOSCZ41	B63156	WO200061629-A1	Cancer
HMVEC89	B63157	WO200061629-A1	Cancer
HPJB51	B63162	WO200061629-A1	Cancer
HGBBR29	B63164	WO200061629-A1	Cancer
HPMDD27	B63165	WO200061629-A1	Cancer
HPRCM72	B63169	WO200061629-A1	Cancer
HPTRM02	B63171	WO200061629-A1	Cancer
HPTRW28	B63172	WO200061629-A1	Cancer
HRAAZ12	B63175	WO200061629-A1	Cancer
HRDEX93	B63177	WO200061629-A1	Cancer
HRDFE30	B63178	WO200061629-A1	Cancer
HBJHT01	B63180	WO200061629-A1	Immune/Hematopoietic, Reproductive
HE8FC45	B64422	WO200077255-A1	Cancer
HETCI16	B64423	WO200077255-A1	Cancer
HFCBL53	B64427	WO200077255-A1	Cancer
HE6GR29	B64429	WO200077255-A1	Cancer
HBJEA15	B64432	WO200077255-A1	Cancer
HAPNJ33	B64434	WO200077255-A1	Cancer
HTXKB57	B64435	WO200077255-A1	Cancer
HDLAL94	B64438	WO200077255-A1	Cancer
HFVHX08	B64440	WO200077255-A1	Cancer
HMVCS92	B64441	WO200077255-A1	Cancer
HNEDQ02	B64443	WO200077255-A1	Cancer
HPWTF53	B64450	WO200077255-A1	Cancer
HRTAP63	B64451	WO200077255-A1	Cancer
HASAU26	B64453	WO200077255-A1	Cancer
HPWTF23	B64456	WO200077255-A1	Cancer
HSLHG78	B64457	WO200077255-A1	Cancer
HTNBJ15	B64461	WO200077255-A1	Cancer
HTXJW06	B64463	WO200077255-A1	Cancer
HUKFV37	B64466	WO200077255-A1	Cancer
HWBBU75	B64468	WO200077255-A1	Cancer
HWBEF34	B64469	WO200077255-A1	Immune/Hematopoietic, Neural/Sensory
HDLAL94	B64492	WO200077255-A1	Cancer
HUKFV37	B64539	WO200077255-A1	Cancer
HUKFV37	B64540	WO200077255-A1	Cancer
HMSGU30	B64549	WO200077197-A1	Cancer
HMSHU20	B64550	WO200077197-A1	Immune/Hematopoietic, Reproductive
HMTAB77	B64551	WO200077197-A1	Cancer
HMUBX48	B64552	WO200077197-A1	Musculoskeletal, Reproductive
HMWCG28	B64553	WO200077197-A1	Cancer
HMWFO89	B64555	WO200077197-A1	Cancer
HMWGM41	B64556	WO200077197-A1	Cancer
HMWGV85	B64557	WO200077197-A1	Cancer

HNDAC35	B64558	WO200077197-A1	Cancer
HNGDN07	B64559	WO200077197-A1	Immune/Hematopoietic, Reproductive
HOFMF63	B64564	WO200077197-A1	Cancer
HOSEO83	B64567	WO200077197-A1	Cancer
HPIAL55	B64568	WO200077197-A1	Cancer
HRAAF59	B64569	WO200077197-A1	Excretory
HSDIK31	B64571	WO200077197-A1	Cancer
HSDJG47	B64573	WO200077197-A1	Cancer
HSOAT44	B64574	WO200077197-A1	Cancer
HTAEF02	B64578	WO200077197-A1	Immune/Hematopoietic
HTLCX82	B64579	WO200077197-A1	Cancer
HADDP51	B64581	WO200077197-A1	Cancer
HAOAG15	B64584	WO200077197-A1	Cancer
HATCS79	B64585	WO200077197-A1	Endocrine, Immune/Hematopoietic
HMWGM41	B64604	WO200077197-A1	Cancer
HOFMF63	B64612	WO200077197-A1	Cancer
HEMBP72	B64627	WO200077197-A1	Cancer
HEMBP72	B64628	WO200077197-A1	Cancer
HAOAG15	B64657	WO200077197-A1	Cancer
HAOAG15	B64658	WO200077197-A1	Cancer
HKGDO12	B64667	WO200077237-A1	Cancer
HLQAD72	B64668	WO200077237-A1	Cancer
HFXHM93	B64672	WO200077237-A1	Neural/Sensory
HEBCW57	B64675	WO200077237-A1	Mixed Fetal, Neural/Sensory
HAECD28	B64676	WO200077237-A1	Cancer
HADXA10	B64677	WO200077237-A1	Cancer
HELEL76	B64678	WO200077237-A1	Cancer
HETBJ88	B64680	WO200077237-A1	Cancer
HETCM67	B64681	WO200077237-A1	Cancer
HFCBL53	B64682	WO200077237-A1	Cancer
HFEBK75	B64683	WO200077237-A1	Connective/Epithelial
HFIIZ61	B64684	WO200077237-A1	Cancer
HGBDL51	B64688	WO200077237-A1	Cancer
HGLDA95	B64689	WO200077237-A1	Cancer
HGLDB06	B64690	WO200077237-A1	Cancer
HHBEI14	B64691	WO200077237-A1	Cancer
HLDBG17	B64697	WO200077237-A1	Cancer
HMCIH27	B64701	WO200077237-A1	Cancer
HMEKW71	B64702	WO200077237-A1	Cancer
HNGEA90	B64705	WO200077237-A1	Immune/Hematopoietic
HNHEN70	B64708	WO200077237-A1	Cancer
HOAAH51	B64711	WO200077237-A1	Cancer
HORBL77	B64712	WO200077237-A1	Cancer
HODAH46	B64713	WO200077237-A1	Cancer
HMWEM23	B64718	WO200077237-A1	Cancer
HNEBX72	B64775	WO200077256-A1	Immune/Hematopoietic, Neural/Sensory
H6EEA48	B64776	WO200077256-A1	Cancer
HACBS22	B64778	WO200077256-A1	Cancer
HADDP23	B64779	WO200077256-A1	Cancer
HAGFD75	B64782	WO200077256-A1	Cancer
HAGFS57	B64783	WO200077256-A1	Cancer

HAHSD51	B64785	WO200077256-A1	Cancer
HANKC93	B64787	WO200077256-A1	Musculoskeletal
HAPSH37	B64789	WO200077256-A1	Cancer
HATAL05	B64790	WO200077256-A1	Cancer
HCBAB34	B64799	WO200077256-A1	Cancer
HCE5H86	B64802	WO200077256-A1	Cancer
HCEBF54	B64803	WO200077256-A1	Cancer
HCEDN07	B64804	WO200077256-A1	Digestive, Mixed Fetal, Neural/Sensory
HCEGH74	B64805	WO200077256-A1	Cancer
HCELB04	B64806	WO200077256-A1	Cancer
HDHEA33	B64813	WO200077256-A1	Cancer
HDPIF65	B64814	WO200077256-A1	Immune/Hematopoietic
HDPMC52	B64816	WO200077256-A1	Digestive, Immune/Hematopoietic, Musculoskeletal
HDSAO14	B64819	WO200077256-A1	Cancer
HDTAR39	B64820	WO200077256-A1	Cancer
HBXFW01	B64844	WO200077256-A1	Neural/Sensory
HLYEJ14	B64883	WO200076530-A1	Cancer
HPJCX13	B64888	WO200076530-A1	Cancer
HFKEV77	B64889	WO200076530-A1	Cancer
HCEOV48	B64890	WO200076530-A1	Cancer
HCRM35	B64891	WO200076530-A1	Cancer
HDPNJ26	B64893	WO200076530-A1	Cancer
HDQGD06	B64894	WO200076530-A1	Cancer
HDQHM36	B64895	WO200076530-A1	Immune/Hematopoietic
HFCBL53	B64901	WO200076530-A1	Cancer
HIICO70	B64905	WO200076530-A1	Cancer
HLDCR26	B64908	WO200076530-A1	Cancer
HLDDM27	B64909	WO200076530-A1	Cancer
HMABK52	B64910	WO200076530-A1	Immune/Hematopoietic
HNGBC53	B64915	WO200076530-A1	Immune/Hematopoietic
HNGJB41	B64916	WO200076530-A1	Immune/Hematopoietic
HNHLS76	B64917	WO200076530-A1	Immune/Hematopoietic
HSJAQ10	B64925	WO200076530-A1	Cancer
HSLDW54	B64927	WO200076530-A1	Cancer
HSLFR59	B64928	WO200076530-A1	Cancer
HSNAN38	B64930	WO200076530-A1	Cancer
HLYEJ14	B64931	WO200076530-A1	Cancer
HLYEJ14	B64932	WO200076530-A1	Cancer
HPMCV08	B64993	WO200075375-A1	Cancer
HFKE67	B64994	WO200075375-A1	Excretory, Neural/Sensory, Reproductive
HDTBW53	B64996	WO200075375-A1	Cancer
HFICL62	B64997	WO200075375-A1	Cancer
HKAIA52	B64998	WO200075375-A1	Cancer
HEGAK44	B64999	WO200075375-A1	Cancer
HFXHC85	B65000	WO200075375-A1	Cancer
HSXCV85	B65001	WO200075375-A1	Neural/Sensory, Reproductive
HPMCU14	B65002	WO200075375-A1	Cancer
HYACJ27	B65003	WO200075375-A1	Immune/Hematopoietic
HAQBZ15	B65004	WO200075375-A1	Cancer

HBIBX03	B65005	WO200075375-A1	Cancer
HBMVIO6	B65006	WO200075375-A1	Cancer
HDPBA28	B65007	WO200075375-A1	Cancer
HDPUH26	B65008	WO200075375-A1	Cancer
HJTAD07	B65009	WO200075375-A1	Cancer
HDPPJ60	B65010	WO200075375-A1	Cancer
HLTAU74	B65011	WO200075375-A1	Cancer
HCFNN16	B65012	WO200075375-A1	Cancer
HCWUI05	B65013	WO200075375-A1	Immune/Hematopoietic
HCEBC76	B65014	WO200075375-A1	Neural/Sensory
HTEGT82	B65015	WO200075375-A1	Digestive, Reproductive
HLHTP35	B65016	WO200075375-A1	Cancer
HSYAZ63	B65017	WO200075375-A1	Cancer
HLTCR13	B65018	WO200075375-A1	Cancer
HPMCV08	B65019	WO200075375-A1	Cancer
HEGAK44	B65021	WO200075375-A1	Cancer
HEGAK44	B65022	WO200075375-A1	Cancer
HSXCV85	B65024	WO200075375-A1	Neural/Sensory, Reproductive
HAQBZ15	B65025	WO200075375-A1	Cancer
HDPMM34	R76127	WO9517092-A	Cancer
HAPBR31	R76128	WO9517092-A	Cancer
HPTXE69	R76818	WO9520398-A	Cancer
HPTGA39	R76820	WO9520398-A	Cancer
HFTDJ13	R81567	WO9606169-A1	Cancer
HPAAA47	R88481	WO9601270-A1	Cancer
HDQAC88	R93087	WO9605856-A1	Cancer
HCHBM70	W06550	WO9639419-A1	Cancer
HAPBR31	W07203	WO9634891-A1	Cancer
HDPMM34	W07204	WO9634891-A1	Cancer
HDTAX72	W07606	WO9639522-A1	Cancer
HPBCW46	W09405	WO9639158-A1	Mixed Fetal, Neural/Sensory
HE9ME29	W09408	WO9639486-A1	Cancer
HDTAX72	W10574	WO9624668-A1	Cancer
HGCOP28	W12692	WO9639424-A1	Cancer
HDQAC88	W22670	WO9731098-A1	Cancer
HDPJJ70	W22732	WO9724929-A1	Cancer
HSKHZ53	W23663	WO9729189-A1	Cancer
HATCY89	W27087	WO9725349-A1	Cancer
HNTCF82	W27224	WO9735870-A1	Cardiovascular, Connective/Epithelial, Reproductive
HFEBJ25	W29291	WO9735010-A1	Cancer
HKMMP34	W29292	WO9735010-A1	Cancer
HBMBJ94	W31527	WO9737022-A1	Digestive, Immune/Hematopoietic
HDPVA94	W31902	WO9737021-A1	Cancer
HFIZF58	W32110	WO9738012-A1	Cancer
HSLDE91	W32112	WO9734998-A1	Cancer
HDPVA94	W32323	WO9736915-A1	Cancer
HETFO52	W35803	WO9734997-A1	Neural/Sensory, Reproductive
HETEZ10	W35804	WO9734997-A1	Cancer
HBMTO47	W35904	WO9738003-A1	Cancer



HDQDX59	W37002	WO9733902-A1	Cancer
H2LAJ93	W37844	WO9807749-A1	Cancer
HMWIP18	W37845	WO9807749-A1	Cancer
HMQDN51	W37935	WO9808870-A1	Cancer
HOECW07	W37946	WO9821236-A1	Cancer
HTHBJ48	W41938	WO9748807-A1	Digestive, Immune/Hematopoietic
HCHBM70	W46882	US5733748-A	Cancer
HAHSD23	W48334	WO9807881-A1	Cancer
HTEHH47	W48335	WO9807754-A1	Cancer
HPASD50	W48391	WO9807735-A1	Cancer
HDQMC88	W52842	WO9807862-A2	Connective/Epithelial, Immune/Hematopoietic
HKACN58	W53897	WO9808969-A1	Cancer
HOEAL47	W57635	WO9812344-A1	Cancer
HAPBR31	W57697	WO9814582-A1	Cancer
HDPMM34	W57698	WO9814582-A1	Cancer
HE9ME29	W58704	US5780263-A	Cancer
HDTAX72	W58901	WO9814477-A1	Cancer
HISCH47	W61621	WO9831799-A2	Cancer
HDPIR89	W61622	WO9831799-A2	Digestive, Immune/Hematopoietic
HAIDQ59	W61623	WO9831799-A2	Cancer
HHFEK40	W61624	WO9831799-A2	Cancer
HGBGV89	W61625	WO9831799-A2	Digestive
HUVBB80	W61626	WO9831799-A2	Cancer
HFGAG96	W61629	WO9831799-A2	Cancer
HDTEA84	W63622	WO9830694-A2	Cancer
HPRCB54	W64668	WO9830693-A2	Cancer
HAGFY16	W67808	WO9842738-A1	Cancer
HASAV70	W67811	WO9842738-A1	Cancer
HBNAF22	W67812	WO9842738-A1	Cancer
HCDDR90	W67814	WO9842738-A1	Cancer
HCEEF50	W67815	WO9842738-A1	Cardiovascular, Neural/Sensory
HCEMU42	W67816	WO9842738-A1	Cancer
HCENE16	W67817	WO9842738-A1	Cancer
HMSJJ74	W67818	WO9842738-A1	Cancer
HCUBF15	W67819	WO9842738-A1	Immune/Hematopoietic
HE2DE47	W67820	WO9842738-A1	Cancer
HKMLH01	W67821	WO9842738-A1	Cancer
HE9DG49	W67822	WO9842738-A1	Cancer
HELBA06	W67823	WO9842738-A1	Cancer
HSLFM29	W67824	WO9842738-A1	Cancer
HELBW38	W67825	WO9842738-A1	Cancer
HFEAF41	W67828	WO9842738-A1	Connective/Epithelial, Digestive
HFTBE43	W67831	WO9842738-A1	Cancer
HLHSV96	W67835	WO9842738-A1	Respiratory
HLTBX31	W67837	WO9842738-A1	Cancer
HLTCJ63	W67838	WO9842738-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HMQAJ64	W67840	WO9842738-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive

HOABG65	W67841	WO9842738-A1	Musculoskeletal
HODCL36	W67842	WO9842738-A1	Cancer
HODCL50	W67843	WO9842738-A1	Reproductive
HODCZ16	W67845	WO9842738-A1	Cancer
HTOEU03	W67846	WO9842738-A1	Cancer
HPBCJ74	W67847	WO9842738-A1	Cancer
HSIDQ18	W67850	WO9842738-A1	Cancer
HSJBQ79	W67852	WO9842738-A1	Cancer
HTEJN13	W67854	WO9842738-A1	Neural/Sensory, Reproductive
HTHBL86	W67855	WO9842738-A1	Immune/Hematopoietic
HTSFO71	W67856	WO9842738-A1	Cancer
HAPNO80	W67857	WO9842738-A1	Cancer
HBIBZ09	W67858	WO9842738-A1	Cancer
HCFLD84	W67859	WO9842738-A1	Cancer
HE8EZ48	W67861	WO9842738-A1	Cancer
HEBGF73	W67862	WO9842738-A1	Cancer
HFEBF41	W67863	WO9842738-A1	Cancer
HFRBU14	W67864	WO9842738-A1	Neural/Sensory
HHGCO88	W67867	WO9842738-A1	Cancer
HHGDB72	W67869	WO9842738-A1	Cancer
HHGDI71	W67870	WO9842738-A1	Excretory
HHSDI45	W67871	WO9842738-A1	Cancer
HHSEB66	W67872	WO9842738-A1	Cancer
HAUAI83	W67873	WO9842738-A1	Reproductive
HKDBL30	W67874	WO9842738-A1	Cancer
HLDBQ19	W67875	WO9842738-A1	Cancer
HMSGT42	W67876	WO9842738-A1	Cancer
HMWIC78	W67877	WO9842738-A1	Cancer
HMWIR31	W67878	WO9842738-A1	Cancer
HNTAC73	W67880	WO9842738-A1	Cancer
HOSEI45	W67881	WO9842738-A1	Cancer
HOSFD58	W67882	WO9842738-A1	Cancer
HSAUM95	W67883	WO9842738-A1	Cancer
HSAUR67	W67884	WO9842738-A1	Immune/Hematopoietic
HSKDI81	W67885	WO9842738-A1	Cancer
HOUFJ08	W67886	WO9842738-A1	Cancer
HTLEX50	W67887	WO9842738-A1	Cancer
HSKHL65	W67888	WO9842738-A1	Cancer
HHFGA11	W67889	WO9842738-A1	Cancer
HAQCF47	W67890	WO9842738-A1	Cancer
HBXFG80	W67891	WO9842738-A1	Cancer
HFLQB16	W67895	WO9842738-A1	Cancer
HBMCP89	W67896	WO9842738-A1	Cancer
HE6DG34	W67897	WO9842738-A1	Cancer
HE9DG49	W67898	WO9842738-A1	Cancer
HELBA06	W67899	WO9842738-A1	Cancer
HMQAJ64	W67900	WO9842738-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive
HODCL36	W67901	WO9842738-A1	Cancer
HODCL36	W67902	WO9842738-A1	Cancer
HCMSD80	W67903	WO9842738-A1	Cancer
HPBCJ74	W67904	WO9842738-A1	Cancer
HHGDU04	W67905	WO9842738-A1	Cancer

HTEJN13	W67907	WO9842738-A1	Neural/Sensory, Reproductive
HAUCC47	W67909	WO9842738-A1	Cancer
HOSFD58	W67913	WO9842738-A1	Cancer
HSKHL65	W67916	WO9842738-A1	Cancer
HHFGA11	W67917	WO9842738-A1	Cancer
HOEBX83	W67918	WO9842738-A1	Cancer
HHFGA11	W67919	WO9842738-A1	Cancer
HTSFO71	W67967	WO9842738-A1	Cancer
HKFBC53	W68002	WO9842738-A1	Cancer
HSPBS71	W69221	WO9828420-A1	Connective/Epithelial, Digestive, Immune/Hematopoietic
HDPBT77	W69232	WO9831806-A2	Digestive, Immune/Hematopoietic, Reproductive
HNFFL83	W69233	WO9831806-A2	Digestive, Immune/Hematopoietic
HETHE81	W71593	WO9833912-A1	Cancer
HSVBZ80	W73397	WO9854206-A1	Cancer
HTAAU21	W73398	WO9854206-A1	Cancer
HUSIR91	W73400	WO9854206-A1	Cancer
HADMC21	W73401	WO9854206-A1	Cancer
HAGFM45	W73402	WO9854206-A1	Cancer
HAIBE65	W73403	WO9854206-A1	Cancer
HAQBH57	W73404	WO9854206-A1	Cancer
HATCX80	W73405	WO9854206-A1	Cancer
HLDOT61	W73408	WO9854206-A1	Cancer
HEMCM42	W73409	WO9854206-A1	Cancer
HFCDW34	W73411	WO9854206-A1	Cancer
HTTEU91	W73412	WO9854206-A1	Cancer
HHGBF89	W73413	WO9854206-A1	Mixed Fetal
HKMLN27	W73415	WO9854206-A1	Cancer
HLIAZ61	W73419	WO9854206-A1	Immune/Hematopoietic
HMQDT36	W73420	WO9854206-A1	Cancer
HETFI51	W73428	WO9854206-A1	Cancer
HUSIR91	W73429	WO9854206-A1	Cancer
HHGBF89	W73430	WO9854206-A1	Mixed Fetal
HPWBA10	W73432	WO9854206-A1	Immune/Hematopoietic, Reproductive
HPMBQ91	W74413	EP892053-A2	Reproductive
HBGBW52	W74732	WO9839448-A2	Cancer
HCUFQ22	W74734	WO9839448-A2	Immune/Hematopoietic
HLDOU93	W74738	WO9839448-A2	Digestive, Musculoskeletal, Reproductive
HNGJJ68	W74741	WO9839448-A2	Cancer
HCFAW04	W74742	WO9839448-A2	Immune/Hematopoietic
HLMAV65	W74743	WO9839448-A2	Cancer
HPMFD84	W74744	WO9839448-A2	Cancer
HE6DB26	W74745	WO9839448-A2	Cancer
HODBD33	W74747	WO9839448-A2	Reproductive
HBIAE44	W74750	WO9839448-A2	Immune/Hematopoietic
HCFME41	W74751	WO9839448-A2	Cancer
HOGCO71	W74752	WO9839448-A2	Cancer
HOSEX08	W74753	WO9839448-A2	Cancer

HSKNJ72	W74754	WO9839448-A2	Digestive, Musculoskeletal
HEBEB69	W74755	WO9839448-A2	Neural/Sensory, Reproductive
HE6EH18	W74756	WO9839448-A2	Mixed Fetal, Neural/Sensory
HSSDM73	W74758	WO9839448-A2	Musculoskeletal, Neural/Sensory, Reproductive
HMKCU94	W74761	WO9839448-A2	Cancer
HRDEW41	W74762	WO9839448-A2	Cancer
HBGDA21	W74764	WO9839448-A2	Cancer
HFGAK75	W74765	WO9839448-A2	Cancer
HFSAU96	W74766	WO9839448-A2	Cancer
HOVCL83	W74767	WO9839448-A2	Cancer
HBICM48	W74769	WO9839448-A2	Cancer
HLTCL35	W74770	WO9839448-A2	Cancer
HRSAN45	W74771	WO9839448-A2	Cancer
HSNBB14	W74772	WO9839448-A2	Cancer
HMABL38	W74773	WO9839448-A2	Cancer
HSKDK47	W74774	WO9839448-A2	Cancer
HOSFH03	W74775	WO9839448-A2	Cancer
HOGAV75	W74776	WO9839448-A2	Cancer
HBXDO23	W74777	WO9839448-A2	Cancer
HAGBI17	W74778	WO9839448-A2	Cancer
HPRCA31	W74780	WO9839448-A2	Cancer
HPRCE95	W74781	WO9839448-A2	Cancer
HHTLC66	W74782	WO9839448-A2	Cancer
HMADJ02	W74783	WO9839448-A2	Cancer
HPRCU93	W74784	WO9839448-A2	Cancer
HSAXS65	W74785	WO9839448-A2	Cancer
HHFHN61	W74787	WO9839448-A2	Cancer
HCWEF90	W74788	WO9839448-A2	Cancer
HFRAU10	W74790	WO9839448-A2	Neural/Sensory
HATDT67	W74791	WO9839448-A2	Cancer
HOUBG93	W74792	WO9839448-A2	Cancer
HMWEX24	W74793	WO9839448-A2	Cancer
HTOCD52	W74795	WO9839448-A2	Digestive, Immune/Hematopoietic, Reproductive
HTGCP16	W74796	WO9839448-A2	Cancer
HKIXR69	W74797	WO9839448-A2	Cancer
HE6CN34	W74800	WO9839448-A2	Cancer
HSQEL25	W74802	WO9839448-A2	Cancer
HEBEG68	W74803	WO9839448-A2	Cancer
HBIAB39	W74804	WO9839448-A2	Cancer
HOEAS24	W74805	WO9839448-A2	Cancer
HETDD75	W74806	WO9839448-A2	Cancer
HSKNE46	W74807	WO9839448-A2	Cancer
HPMFL27	W74808	WO9839448-A2	Cancer
HPRAX55	W74810	WO9839448-A2	Cancer
HE2PL77	W74812	WO9839448-A2	Cancer
HLHAU92	W74813	WO9839448-A2	Cancer
HTPEG42	W74814	WO9839448-A2	Cancer
HAUAV32	W74816	WO9839448-A2	Cancer
HNEBI60	W74817	WO9839448-A2	Cancer

HTSEL31	W74819	WO9839448-A2	Cancer
HAUBL57	W74820	WO9839448-A2	Cancer
HE6CT48	W74822	WO9839448-A2	Digestive, Mixed Fetal
HMDAA61	W74823	WO9839448-A2	Cancer
HAQBK61	W74824	WO9839448-A2	Cancer
HAQBF73	W74825	WO9839448-A2	Cancer
HAQBT94	W74826	WO9839448-A2	Cancer
HLQAB52	W74828	WO9839448-A2	Cancer
HE2BG03	W74830	WO9839448-A2	Cancer
HCUBC79	W74832	WO9839448-A2	Cancer
HSVAF07	W74833	WO9839448-A2	Cancer
HT3AM65	W74834	WO9839448-A2	Cancer
HE6DK18	W74835	WO9839448-A2	Cancer
HEBEK93	W74836	WO9839448-A2	Cancer
HJPCM10	W74837	WO9839448-A2	Cancer
HSXBL78	W74838	WO9839448-A2	Cancer
HOEAW81	W74839	WO9839448-A2	Cancer
HEAAR60	W74841	WO9839448-A2	Cancer
HOVBA03	W74843	WO9839448-A2	Cancer
HGBGK76	W74844	WO9839448-A2	Digestive, Neural/Sensory
HBMUW78	W74845	WO9839448-A2	Cancer
HATCM76	W74848	WO9839448-A2	Cancer
H6EBJ64	W74849	WO9839448-A2	Cancer
HDDAD77	W74850	WO9839448-A2	Cancer
HSPAG15	W74853	WO9839448-A2	Cancer
HUSHH48	W74855	WO9839448-A2	Cancer
HHSCV65	W74857	WO9839448-A2	Cancer
HHSDQ41	W74858	WO9839448-A2	Cancer
HEBFU93	W74860	WO9839448-A2	Excretory, Neural/Sensory, Reproductive
HSGSC60	W74861	WO9839448-A2	Cancer
HPMGD24	W74862	WO9839448-A2	Cancer
HPTVC60	W74863	WO9839448-A2	Cancer
HSKNE18	W74864	WO9839448-A2	Cancer
HMWIF35	W74865	WO9839448-A2	Cancer
HMWGI25	W74866	WO9839448-A2	Cancer
HSKGF03	W74867	WO9839448-A2	Cancer
HMSKE75	W74868	WO9839448-A2	Cancer
HCM SH30	W74869	WO9839448-A2	Cancer
HTWCB92	W74870	WO9839448-A2	Cancer
HBMDM46	W74871	WO9839448-A2	Cancer
HFXHL79	W74873	WO9839448-A2	Cancer
HBJFJ73	W74874	WO9839448-A2	Cancer
HSJAP03	W74875	WO9839448-A2	Cancer
H6EAD09	W74876	WO9839448-A2	Cancer
HTLEF62	W74879	WO9839448-A2	Cancer
HTLAD94	W74880	WO9839448-A2	Cancer
HTSFQ12	W74881	WO9839448-A2	Cancer
HCE2K05	W74882	WO9839448-A2	Cancer
HLTED27	W74884	WO9839448-A2	Cancer
HMKBA64	W74885	WO9839448-A2	Cancer
HNFCO49	W74886	WO9839448-A2	Cancer

HCELB21	W74887	WO9839448-A2	Cancer
HSAAS44	W74889	WO9839448-A2	Cancer
HAFAL73	W74890	WO9839448-A2	Cancer
HSAWF26	W74891	WO9839448-A2	Digestive, Immune/Hematopoietic, Musculoskeletal
HMQDN51	W74892	WO9839448-A2	Cancer
H2LAO11	W74894	WO9839448-A2	Cancer
HPTTU11	W74896	WO9839448-A2	Cancer
HTEDJ34	W74898	WO9839448-A2	Cancer
HFTAR26	W74900	WO9839448-A2	Cancer
H2MBF44	W74901	WO9839448-A2	Cancer
HE8BI92	W74902	WO9839448-A2	Cancer
HFTBR48	W74903	WO9839448-A2	Cancer
HE9CM64	W74904	WO9839448-A2	Cancer
HATAV51	W74905	WO9839448-A2	Cancer
HCEEK08	W74907	WO9839448-A2	Cancer
HAFAU18	W74908	WO9839448-A2	Cancer
HETBY74	W74909	WO9839448-A2	Cancer
HTOAF35	W74910	WO9839448-A2	Cancer
HCRCB32	W74911	WO9839448-A2	Cancer
HEBGB80	W74912	WO9839448-A2	Cancer
HFAMH74	W74913	WO9839448-A2	Cancer
HLMAV65	W74920	WO9839448-A2	Cancer
HMAGF23	W74922	WO9839448-A2	Cancer
HE6EH18	W74929	WO9839448-A2	Mixed Fetal, Neural/Sensory
HMKCU94	W74930	WO9839448-A2	Cancer
HBGDA21	W74931	WO9839448-A2	Cancer
HFKNF58	W74932	WO9839448-A2	Cancer
HSNBB14	W74935	WO9839448-A2	Cancer
HOSFH03	W74937	WO9839448-A2	Cancer
HAGBI17	W74939	WO9839448-A2	Cancer
HPRCA31	W74940	WO9839448-A2	Cancer
HPRCU93	W74943	WO9839448-A2	Cancer
HPDDK44	W74944	WO9839448-A2	Cancer
HCWEF90	W74946	WO9839448-A2	Cancer
HFRAU10	W74947	WO9839448-A2	Neural/Sensory
HBIAB39	W74953	WO9839448-A2	Cancer
HBIAB39	W74954	WO9839448-A2	Cancer
HOEAS24	W74955	WO9839448-A2	Cancer
HOEAS24	W74956	WO9839448-A2	Cancer
HPRAX55	W74958	WO9839448-A2	Cancer
HTPEG42	W74960	WO9839448-A2	Cancer
HAUAV32	W74961	WO9839448-A2	Cancer
HNEBI60	W74962	WO9839448-A2	Cancer
HAUBL57	W74963	WO9839448-A2	Cancer
HAUBL57	W74964	WO9839448-A2	Cancer
HE6CT48	W74965	WO9839448-A2	Digestive, Mixed Fetal
HMDAA61	W74966	WO9839448-A2	Cancer
HAQBK61	W74967	WO9839448-A2	Cancer
HCUHB01	W74968	WO9839448-A2	Cancer
HETHE07	W74970	WO9839448-A2	Cancer
HETHE07	W74971	WO9839448-A2	Cancer

HLQAB52	W74972	WO9839448-A2	Cancer
HEONN58	W74973	WO9839448-A2	Cancer
HIBEK16	W74974	WO9839448-A2	Cancer
HE2BG03	W74975	WO9839448-A2	Cancer
HCUBC79	W74976	WO9839448-A2	Cancer
HSVAF07	W74978	WO9839448-A2	Cancer
HSVAF07	W74979	WO9839448-A2	Cancer
HT3AM65	W74980	WO9839448-A2	Cancer
HT3AM65	W74981	WO9839448-A2	Cancer
HJPCM10	W74983	WO9839448-A2	Cancer
HJPCM10	W74984	WO9839448-A2	Cancer
HOVBA03	W74987	WO9839448-A2	Cancer
H6EBJ64	W74990	WO9839448-A2	Cancer
HUSHH48	W74991	WO9839448-A2	Cancer
HEBFU93	W74992	WO9839448-A2	Excretory, Neural/Sensory, Reproductive
HPTVC60	W74993	WO9839448-A2	Cancer
HMWIF35	W74995	WO9839448-A2	Cancer
HSKGF03	W74996	WO9839448-A2	Cancer
HBJFJ73	W75000	WO9839448-A2	Cancer
HCFBC03	W75001	WO9839448-A2	Cancer
HSJAP03	W75002	WO9839448-A2	Cancer
HE6FL83	W75005	WO9839448-A2	Cancer
HPTTU11	W75013	WO9839448-A2	Cancer
H2MBF44	W75015	WO9839448-A2	Cancer
HE9CM64	W75018	WO9839448-A2	Cancer
HAFAU18	W75021	WO9839448-A2	Cancer
HSHCC16	W75050	WO9839448-A2	Cancer
HGCM20	W75057	WO9839446-A2	Cancer
HLDBG33	W75058	WO9839446-A2	Cancer
HLHEJ14	W75059	WO9839446-A2	Cancer
HKCSR70	W75060	WO9839446-A2	Cancer
HBMCY91	W75062	WO9839446-A2	Immune/Hematopoietic
HSSGE07	W75063	WO9839446-A2	Cancer
HBMBX59	W75064	WO9839446-A2	Immune/Hematopoietic, Reproductive
HNGIT22	W75065	WO9839446-A2	Immune/Hematopoietic
HERAD57	W75066	WO9839446-A2	Connective/Epithelial
HCENJ40	W75067	WO9839446-A2	Cancer
HCSRA90	W75068	WO9839446-A2	Cardiovascular, Musculoskeletal
HBJFC03	W75069	WO9839446-A2	Immune/Hematopoietic
HTEBY26	W75071	WO9839446-A2	Cancer
HMABH07	W75072	WO9839446-A2	Cancer
HSKNY94	W75073	WO9839446-A2	Cancer
HMCDA67	W75074	WO9839446-A2	Immune/Hematopoietic
HOSFF45	W75075	WO9839446-A2	Cancer
HMJAA51	W75076	WO9839446-A2	Cancer
HTEBF05	W75077	WO9839446-A2	Reproductive
HTEAL31	W75078	WO9839446-A2	Cancer
HSKXE91	W75080	WO9839446-A2	Cancer
HPWTB39	W75081	WO9839446-A2	Mixed Fetal, Reproductive
HTLEV12	W75082	WO9839446-A2	Reproductive

HSPAF93	W75083	WO9839446-A2	Digestive
HHFGL62	W75084	WO9839446-A2	Cardiovascular
HCE1U14	W75085	WO9839446-A2	Cancer
HTHBA79	W75087	WO9839446-A2	Cancer
HAGBB70	W75088	WO9839446-A2	Cancer
HETDG84	W75089	WO9839446-A2	Cancer
HTEGA81	W75090	WO9839446-A2	Cancer
HTXAK60	W75091	WO9839446-A2	Cancer
HMHBN40	W75092	WO9839446-A2	Cancer
HFVGS85	W75093	WO9839446-A2	Cancer
HERAH81	W75094	WO9839446-A2	Cancer
HMSEU04	W75095	WO9839446-A2	Cancer
HNEDJ57	W75096	WO9839446-A2	Cancer
HNTME13	W75097	WO9839446-A2	Cancer
HSXBI25	W75098	WO9839446-A2	Cancer
HSXCK41	W75099	WO9839446-A2	Cancer
HE8CJ26	W75100	WO9839446-A2	Cancer
HTTDS54	W75101	WO9839446-A2	Cancer
HHFCW44	W75102	WO9839446-A2	Cancer
HMCBP63	W75103	WO9839446-A2	Cancer
HEMGE83	W75104	WO9839446-A2	Cancer
HHSDC22	W75105	WO9839446-A2	Digestive, Neural/Sensory
HHSDZ57	W75106	WO9839446-A2	Cancer
HCRBS80	W75107	WO9839446-A2	Cancer
HMMAB12	W75108	WO9839446-A2	Immune/Hematopoietic, Neural/Sensory
HSKDW02	W75109	WO9839446-A2	Cancer
HWHHL34	W75110	WO9839446-A2	Cancer
HODAZ50	W75111	WO9839446-A2	Reproductive
HCEWC82	W75112	WO9839446-A2	Cancer
HE6ES13	W75113	WO9839446-A2	Cancer
HSSEP68	W75114	WO9839446-A2	Cancer
HRDEV41	W75115	WO9839446-A2	Cancer
HILCJ01	W75116	WO9839446-A2	Cancer
HSATP28	W75117	WO9839446-A2	Cancer
HBJEM49	W75119	WO9839446-A2	Cancer
HSLDJ95	W75120	WO9839446-A2	Cancer, Immune
HSREG44	W75121	WO9839446-A2	Cancer
HTXCT40	W75122	WO9839446-A2	Cancer
HRGDF73	W75123	WO9839446-A2	Cancer
HKMND45	W75124	WO9839446-A2	Cancer
HPEBD70	W75125	WO9839446-A2	Cancer
HLMDX11	W75126	WO9839446-A2	Cancer
HKCSR70	W75128	WO9839446-A2	Cancer
HETBI87	W75129	WO9839446-A2	Reproductive
HSSGE07	W75130	WO9839446-A2	Cancer
HCENJ40	W75132	WO9839446-A2	Cancer
HSNBL85	W75135	WO9839446-A2	Cancer
HMAAD57	W75137	WO9839446-A2	Cancer
HMAAD57	W75138	WO9839446-A2	Cancer
HSKNY94	W75139	WO9839446-A2	Cancer
HOSFF45	W75140	WO9839446-A2	Cancer
HMJAA51	W75141	WO9839446-A2	Cancer
HTEAL31	W75142	WO9839446-A2	Cancer



HSPAF93	W75145	WO9839446-A2	Digestive
HHFGL62	W75146	WO9839446-A2	Cardiovascular
HTHBA79	W75148	WO9839446-A2	Cancer
HTEGA81	W75151	WO9839446-A2	Cancer
HTEGA81	W75152	WO9839446-A2	Cancer
HMHBN40	W75154	WO9839446-A2	Cancer
HLHDL62	W75155	WO9839446-A2	Cancer
HSXBI25	W75156	WO9839446-A2	Cancer
HSXCK41	W75157	WO9839446-A2	Cancer
HTTDS54	W75159	WO9839446-A2	Cancer
HHFCW44	W75160	WO9839446-A2	Cancer
HHSDZ57	W75161	WO9839446-A2	Cancer
HAICS58	W75162	WO9839446-A2	Cancer
HAICS58	W75163	WO9839446-A2	Cancer
HSKDW02	W75165	WO9839446-A2	Cancer
HETGL41	W75166	WO9839446-A2	Cancer
HODAZ50	W75167	WO9839446-A2	Reproductive
HE6ES13	W75168	WO9839446-A2	Cancer
HSSEP68	W75169	WO9839446-A2	Cancer
HRDEV41	W75171	WO9839446-A2	Cancer
HHFGL41	W75172	WO9839446-A2	Cancer
HBJEM49	W75173	WO9839446-A2	Cancer
HFTAK35	W75174	WO9839446-A2	Cancer
HTXCT40	W75175	WO9839446-A2	Cancer
HRDBF52	W75176	WO9839446-A2	Cancer
HKMND45	W75177	WO9839446-A2	Cancer
HDTBJ30	W75178	WO9839446-A2	Cancer
HLMDX11	W75179	WO9839446-A2	Cancer
HCEAB46	W75196	WO9840483-A2	Cancer
HCEDH81	W75197	WO9840483-A2	Cancer
HELDY41	W75200	WO9840483-A2	Cancer
HETDM20	W75201	WO9840483-A2	Cancer
HE2DX30	W75202	WO9840483-A2	Cancer
HJBCD89	W75204	WO9840483-A2	Cancer
HJTAA17	W75205	WO9840483-A2	Cancer
HLTBS22	W75206	WO9840483-A2	Cancer
HNFCV70	W75208	WO9840483-A2	Cancer
HNFGF45	W75210	WO9840483-A2	Cancer
HOVAB12	W75211	WO9840483-A2	Cancer
HPMBQ91	W75212	WO9840483-A2	Reproductive
HRSMC69	W75214	WO9840483-A2	Cancer
HSQFP46	W75216	WO9840483-A2	Cancer
HTEAB62	W75218	WO9840483-A2	Cardiovascular, Reproductive
HTEBY11	W75219	WO9840483-A2	Reproductive
HTEEB42	W75220	WO9840483-A2	Cancer
HTPBY11	W75221	WO9840483-A2	Cancer
HCEDH81	W75224	WO9840483-A2	Cancer
HJBCD89	W75226	WO9840483-A2	Cancer
HNFCV70	W75227	WO9840483-A2	Cancer
HPMBQ91	W75228	WO9840483-A2	Reproductive
HBMSH54	W75231	WO9840483-A2	Cancer
HSDEG01	W75232	WO9840483-A2	Cancer
HSQFP46	W75233	WO9840483-A2	Cancer
HTEBY11	W75234	WO9840483-A2	Reproductive

HYACC84	W75245	WO9840483-A2	Cancer
HETAG43	W76253	WO9831818-A2	Digestive, Reproductive
HOSBI96	W78128	WO9856804-A1	Cancer
HPDDC77	W78131	WO9856804-A1	Cancer
HPEBD85	W78132	WO9856804-A1	Digestive, Reproductive
HPMGQ80	W78135	WO9856804-A1	Cancer
HSDES04	W78140	WO9856804-A1	Cancer
HSHBQ68	W78141	WO9856804-A1	Cancer
HSKBO20	W78142	WO9856804-A1	Cancer
HSKZE52	W78145	WO9856804-A1	Cancer
HWTAZ75	W78146	WO9856804-A1	Cancer
HSVAG05	W78148	WO9856804-A1	Cancer
HSVBF78	W78149	WO9856804-A1	Cancer
HSXBO51	W78150	WO9856804-A1	Cancer
HT4AI54	W78152	WO9856804-A1	Cancer
HTEHU93	W78153	WO9856804-A1	Reproductive
HMSDG61	W78154	WO9856804-A1	Cancer
HTLDQ11	W78157	WO9856804-A1	Reproductive
HTOBX52	W78158	WO9856804-A1	Cancer
HTTCN24	W78159	WO9856804-A1	Cancer
HTXCS21	W78160	WO9856804-A1	Cancer
HBMBB80	W78164	WO9856804-A1	Digestive, Immune/Hematopoietic
HSXBP68	W78166	WO9856804-A1	Cancer
HFFAT33	W78167	WO9856804-A1	Cancer
HFGAG96	W78168	WO9856804-A1	Cancer
HETFJ05	W78169	WO9856804-A1	Cancer
HE8BX01	W78170	WO9856804-A1	Cancer
HMSJU68	W78171	WO9856804-A1	Cancer
HOS CZ41	W78172	WO9856804-A1	Cancer
HSQEA85	W78174	WO9856804-A1	Cancer
HSTAG52	W78175	WO9856804-A1	Cancer
HBXGP76	W78177	WO9856804-A1	Immune/Hematopoietic, Neural/Sensory
HE6GL64	W78178	WO9856804-A1	Cardiovascular, Immune/Hematopoietic, Mixed Fetal
HESAL35	W78179	WO9856804-A1	Connective/Epithelial, Mixed Fetal
HNHAL34	W78183	WO9856804-A1	Cancer
HOSFF78	W78184	WO9856804-A1	Cancer
HPMCC16	W78188	WO9856804-A1	Cancer
HOUCQ17	W78189	WO9856804-A1	Cancer
HTOFC34	W78192	WO9856804-A1	Cancer
H2CBJ08	W78193	WO9856804-A1	Cancer
HAGFT48	W78194	WO9856804-A1	Cancer
HCE5M29	W78195	WO9856804-A1	Cancer
HCFNN01	W78197	WO9856804-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HE7TF86	W78198	WO9856804-A1	Cancer
HHG AU81	W78200	WO9856804-A1	Cancer
HPTRF90	W78206	WO9856804-A1	Cancer
HSRDH01	W78207	WO9856804-A1	Cancer

HSAWD74	W78208	WO9856804-A1	Cancer
HTEJO12	W78209	WO9856804-A1	Digestive, Reproductive
HTLAB43	W78210	WO9856804-A1	Cancer
HTWCT03	W78211	WO9856804-A1	Immune/Hematopoietic
HSDES04	W78213	WO9856804-A1	Cancer
HT3BE24	W78214	WO9856804-A1	Cancer
HTTCN24	W78216	WO9856804-A1	Cancer
HCRAZ77	W78221	WO9856804-A1	Cancer
HFGAG96	W78222	WO9856804-A1	Cancer
HADTN61	W78223	WO9856804-A1	Cancer
HLYBF81	W78224	WO9856804-A1	Cancer
HSTBE27	W78225	WO9856804-A1	Cancer
HMSDG61	W78263	WO9856804-A1	Cancer
HTOBX52	W78274	WO9856804-A1	Cancer
HFGAG96	W78295	WO9856804-A1	Cancer
HCE5M29	W78316	WO9856804-A1	Cancer
HLCAA05	W78321	WO9856804-A1	Cancer
HTLEF68	W78326	WO9856804-A1	Cancer
HSJAR34	W79739	WO9846746-A1	Cancer
HOUCQ17	W80285	EP874050-A2	Cancer
HCWHZ93	W83931	WO9845712-A2	Immune/Hematopoietic; Neural/Sensory
HE2FV03	W83933	WO9845712-A2	Cancer
HCDAG36	W83934	WO9845712-A2	Cancer
HMQBU44	W83935	WO9845712-A2	Cancer
HLHCM89	W83938	WO9845712-A2	Cancer
HLHEF26	W83939	WO9845712-A2	Cancer
HLHEO50	W83940	WO9845712-A2	Cancer
HDSAE10	W83941	WO9845712-A2	Cancer
HSKNK73	W83942	WO9845712-A2	Cancer
HSSMS41	W83943	WO9845712-A2	Cancer
HNGBV36	W83944	WO9845712-A2	Cancer
HNGDE27	W83945	WO9845712-A2	Immune/Hematopoietic
HPFDU90	W83947	WO9845712-A2	Cancer
HRLMD77	W83948	WO9845712-A2	Cancer
HRLMF92	W83949	WO9845712-A2	Cancer
HLHDZ58	W88535	WO9854963-A2	Respiratory
HLMMJ13	W88536	WO9854963-A2	Immune/Hematopoietic, Musculoskeletal, Reproductive
HNFE65	W88539	WO9854963-A2	Excretory, Immune/Hematopoietic
HNHDX07	W88540	WO9854963-A2	Immune/Hematopoietic
HNHGC82	W88541	WO9854963-A2	Immune/Hematopoietic
HNHGO09	W88542	WO9854963-A2	Immune/Hematopoietic
HOUBE18	W88543	WO9854963-A2	Cancer
HOUDL69	W88544	WO9854963-A2	Cancer
HPMFI71	W88545	WO9854963-A2	Cancer
HPTBB03	W88548	WO9854963-A2	Cancer
HPTWA66	W88549	WO9854963-A2	Cancer
HPTWC08	W88550	WO9854963-A2	Cancer
HRGCZ46	W88551	WO9854963-A2	Cancer
HSVU34	W88552	WO9854963-A2	Cancer
HSDFW61	W88553	WO9854963-A2	Cancer

HSQEO84	W88556	WO9854963-A2	Cancer
HSXAM05	W88557	WO9854963-A2	Cancer
HSXAS67	W88558	WO9854963-A2	Neural/Sensory
HTDAF28	W88559	WO9854963-A2	Cancer
HTOAM21	W88562	WO9854963-A2	Immune/Hematopoietic
HETCH46	W88563	WO9854963-A2	Cancer
HJPCD40	W88564	WO9854963-A2	Cancer
HTWBY48	W88565	WO9854963-A2	Immune/Hematopoietic
HWTBF59	W88568	WO9854963-A2	Cancer
HAGFB60	W88570	WO9854963-A2	Neural/Sensory
HATEF60	W88571	WO9854963-A2	Cancer
HCDAR68	W88573	WO9854963-A2	Cancer
HMDAN54	W88575	WO9854963-A2	Immune/Hematopoietic, Neural/Sensory
HCEEC15	W88577	WO9854963-A2	Cancer
HCESF40	W88578	WO9854963-A2	Immune/Hematopoietic, Neural/Sensory
HCFMV39	W88579	WO9854963-A2	Cancer
HCNAP62	W88581	WO9854963-A2	Cancer
HCUDC07	W88583	WO9854963-A2	Immune/Hematopoietic
HCWBB42	W88584	WO9854963-A2	Immune/Hematopoietic
HE9ND48	W88592	WO9854963-A2	Mixed Fetal
HEBBW11	W88593	WO9854963-A2	Cancer
HEMAE80	W88595	WO9854963-A2	Cardiovascular, Musculoskeletal, Reproductive
HFEBA88	W88596	WO9854963-A2	Cancer
HGBAJ93	W88599	WO9854963-A2	Cancer
HGBBQ69	W88600	WO9854963-A2	Cancer
HHFHJ59	W88602	WO9854963-A2	Cancer
HHPFD63	W88606	WO9854963-A2	Endocrine, Immune/Hematopoietic, Neural/Sensory
HHSEG23	W88607	WO9854963-A2	Neural/Sensory
HKIXL73	W88609	WO9854963-A2	Cancer
HKMNC43	W88610	WO9854963-A2	Excretory
HMEJE31	W88611	WO9854963-A2	Cardiovascular
HNFAE54	W88613	WO9854963-A2	Cancer
HNFIJ45	W88614	WO9854963-A2	Immune/Hematopoietic
HNGBT31	W88615	WO9854963-A2	Immune/Hematopoietic
HNGIN60	W88616	WO9854963-A2	Immune/Hematopoietic, Neural/Sensory
HNHDW42	W88618	WO9854963-A2	Immune/Hematopoietic
HNHFL57	W88619	WO9854963-A2	Immune/Hematopoietic
HOGAR52	W88620	WO9854963-A2	Cancer
HOSBZ55	W88621	WO9854963-A2	Cancer
HOSDI92	W88622	WO9854963-A2	Cancer
HPBCU51	W88623	WO9854963-A2	Cancer
HNTSU23	W88628	WO9854963-A2	Cancer
HRDFB85	W88629	WO9854963-A2	Cancer
HSKGN81	W88631	WO9854963-A2	Cancer
HSPA56	W88632	WO9854963-A2	Cancer
HDTAL71	W88633	WO9854963-A2	Cancer
HSXCS62	W88634	WO9854963-A2	Cancer
HTEKM35	W88636	WO9854963-A2	Neural/Sensory, Reproductive

HTGEP89	W88637	WO9854963-A2	Immune/Hematopoietic, Neural/Sensory
HTPCN79	W88640	WO9854963-A2	Digestive, Neural/Sensory
HTSGM54	W88641	WO9854963-A2	Cancer
HTWAF58	W88643	WO9854963-A2	Immune/Hematopoietic
HTWBY29	W88644	WO9854963-A2	Cancer
HUKFC71	W88645	WO9854963-A2	Cancer
HCE2V74	W88646	WO9854963-A2	Cancer
HFXBW82	W88652	WO9854963-A2	Neural/Sensory
HIBED17	W88654	WO9854963-A2	Cancer
HPMCJ92	W88657	WO9854963-A2	Musculoskeletal, Reproductive
HPWAZ95	W88658	WO9854963-A2	Reproductive
HSUBW09	W88660	WO9854963-A2	Digestive, Immune/Hematopoietic
HALSQ59	W88666	WO9854963-A2	Cancer
HAIBP89	W88667	WO9854963-A2	Cancer
HBXGK12	W88669	WO9854963-A2	Cancer
HFKFJ07	W88670	WO9854963-A2	Cancer
HCWHZ24	W88672	WO9854963-A2	Immune/Hematopoietic
HE2GT20	W88673	WO9854963-A2	Cancer
HFTCT67	W88676	WO9854963-A2	Cancer
HUSIT49	W88680	WO9854963-A2	Cancer
HNHED86	W88684	WO9854963-A2	Immune/Hematopoietic
HNHFQ63	W88686	WO9854963-A2	Immune/Hematopoietic
HAGDQ47	W88692	WO9854963-A2	Cancer
HAICP19	W88693	WO9854963-A2	Cancer
HCEQA68	W88699	WO9854963-A2	Neural/Sensory
HCFNF11	W88701	WO9854963-A2	Cancer
HCRBL20	W88702	WO9854963-A2	Cancer
HDSAP81	W88704	WO9854963-A2	Cancer
HE2CT29	W88705	WO9854963-A2	Mixed Fetal
HE8MG65	W88706	WO9854963-A2	Cancer
HE9FB42	W88707	WO9854963-A2	Cancer
HEMAM41	W88708	WO9854963-A2	Cancer
HEMCV19	W88709	WO9854963-A2	Cancer
HETAR54	W88711	WO9854963-A2	Cancer
HETBX14	W88712	WO9854963-A2	Cancer
HFKFI40	W88714	WO9854963-A2	Cancer
HFXHN68	W88715	WO9854963-A2	Cancer
HGBFO79	W88716	WO9854963-A2	Cancer
HGLAM56	W88717	WO9854963-A2	Cancer
HHLBA89	W88718	WO9854963-A2	Digestive
HIASB53	W88723	WO9854963-A2	Cancer
HJABZ65	W88724	WO9854963-A2	Cancer
HJPBB39	W88725	WO9854963-A2	Cancer
HLHSK94	W88726	WO9854963-A2	Cancer
HLMIW92	W88728	WO9854963-A2	Cancer
HLTDB65	W88730	WO9854963-A2	Cancer
HNFAH08	W88733	WO9854963-A2	Cancer
HNGBE45	W88735	WO9854963-A2	Immune/Hematopoietic, Reproductive
HNHCM59	W88737	WO9854963-A2	Cancer
HCDEO95	W88740	WO9854963-A2	Immune/Hematopoietic, Musculoskeletal,

HLMMJ13	W88741	WO9854963-A2	Reproductive Immune/Hematopoietic, Musculoskeletal, Reproductive
HPTWA66	W88742	WO9854963-A2	Cancer
HSADVU34	W88743	WO9854963-A2	Cancer
HSQEO84	W88744	WO9854963-A2	Cancer
HETCH46	W88745	WO9854963-A2	Cancer
HWTBF59	W88746	WO9854963-A2	Cancer
HCESF40	W88747	WO9854963-A2	Immune/Hematopoietic, Neural/Sensory
HOFNZ45	W88748	WO9854963-A2	Reproductive
HPWAN23	W88749	WO9854963-A2	Cancer
HCRBL20	W88754	WO9854963-A2	Cancer
HE8MG65	W88755	WO9854963-A2	Cancer
HEMAM41	W88756	WO9854963-A2	Cancer
HSADVU34	W88760	WO9854963-A2	Cancer
HFHDN80	W88824	WO9854963-A2	Cardiovascular, Digestive, Immune/Hematopoietic
HHFHR32	W88830	WO9854963-A2	Cancer
HSKCP69	W89024	WO9854963-A2	Cancer
HTLCU04	W89076	WO9854963-A2	Cancer
HSKHZ53	W92460	US5871969-A	Cancer
HFIZH13	W94466	WO9900415-A1	Cancer
HE9SF68	W97350	WO9903982-A1	Cancer
HTECE94	Y00258	WO9906423-A1	Cancer
HTWAH05	Y00259	WO9906423-A1	Cancer
HAQAN31	Y00260	WO9906423-A1	Cancer
HAUAQ39	Y00261	WO9906423-A1	Cancer
HBNAU27	Y00262	WO9906423-A1	Cancer
HSIDD28	Y00263	WO9906423-A1	Cancer
HCABR41	Y00264	WO9906423-A1	Cancer
HCUAQ30	Y00265	WO9906423-A1	Immune/Hematopoietic
HE2AF21	Y00266	WO9906423-A1	Mixed Fetal
HE2DC87	Y00267	WO9906423-A1	Mixed Fetal
HE2PO86	Y00269	WO9906423-A1	Cancer
HFCBD73	Y00272	WO9906423-A1	Cancer
HSVAJ05	Y00273	WO9906423-A1	Cancer
HLHSA86	Y00274	WO9906423-A1	Cancer
H2CAA57	Y00278	WO9906423-A1	Cancer
HADFV30	Y00279	WO9906423-A1	Cancer
HAIBO71	Y00280	WO9906423-A1	Connective/Epithelial, Digestive, Immune/Hematopoietic
HAPAT76	Y00281	WO9906423-A1	Cancer
HLHEB47	Y00282	WO9906423-A1	Cancer
HLHEF54	Y00283	WO9906423-A1	Cancer
HLMMJ78	Y00286	WO9906423-A1	Immune/Hematopoietic
HLQBQ85	Y00287	WO9906423-A1	Cancer
HLQBR11	Y00288	WO9906423-A1	Cancer
HLWBZ56	Y00289	WO9906423-A1	Cancer
HMCAR20	Y00292	WO9906423-A1	Cancer
HMCVAV55	Y00293	WO9906423-A1	Immune/Hematopoietic
HMEFS61	Y00294	WO9906423-A1	Cardiovascular
HMEJY78	Y00295	WO9906423-A1	Cancer

HMWHH16	Y00298	WO9906423-A1	Immune/Hematopoietic
HNFFC27	Y00300	WO9906423-A1	Immune/Hematopoietic
HNFFC39	Y00301	WO9906423-A1	Immune/Hematopoietic, Reproductive
HNGAM20	Y00302	WO9906423-A1	Immune/Hematopoietic
HNGDS53	Y00304	WO9906423-A1	Immune/Hematopoietic
HNGEW13	Y00307	WO9906423-A1	Immune/Hematopoietic
HNGEY51	Y00308	WO9906423-A1	Immune/Hematopoietic
HNGEZ47	Y00309	WO9906423-A1	Immune/Hematopoietic
HNGFQ33	Y00310	WO9906423-A1	Immune/Hematopoietic
HNGFU38	Y00311	WO9906423-A1	Immune/Hematopoietic
HSKXE22	Y00313	WO9906423-A1	Cancer
HNHBE49	Y00314	WO9906423-A1	Immune/Hematopoietic
HNHEC59	Y00315	WO9906423-A1	Immune/Hematopoietic
HNHEI54	Y00317	WO9906423-A1	Immune/Hematopoietic, Reproductive
HNHER77	Y00318	WO9906423-A1	Immune/Hematopoietic
HNHES40	Y00319	WO9906423-A1	Immune/Hematopoietic
HNHEV43	Y00320	WO9906423-A1	Immune/Hematopoietic
HNHFL46	Y00321	WO9906423-A1	Immune/Hematopoietic
HNHFP80	Y00322	WO9906423-A1	Immune/Hematopoietic
HNHFS63	Y00323	WO9906423-A1	Immune/Hematopoietic
HNHGC56	Y00324	WO9906423-A1	Immune/Hematopoietic
HRDEL61	Y00328	WO9906423-A1	Musculoskeletal
HSAUC38	Y00329	WO9906423-A1	Immune/Hematopoietic
HSAUF49	Y00330	WO9906423-A1	Immune/Hematopoietic
HSAUK57	Y00331	WO9906423-A1	Immune/Hematopoietic
HSAUL82	Y00332	WO9906423-A1	Immune/Hematopoietic
HSAXI90	Y00333	WO9906423-A1	Immune/Hematopoietic
HSDGW43	Y00335	WO9906423-A1	Neural/Sensory
HSDJM31	Y00336	WO9906423-A1	Digestive, Neural/Sensory
HSDJR23	Y00337	WO9906423-A1	Digestive, Neural/Sensory
HSDMA90	Y00338	WO9906423-A1	Digestive, Endocrine, Neural/Sensory
HSVAJ05	Y00340	WO9906423-A1	Cancer
HAPAT76	Y00341	WO9906423-A1	Cancer
HNGAM20	Y00344	WO9906423-A1	Immune/Hematopoietic
HTXBK30	Y01135	WO9901020-A2	Cancer
H2MBB56	Y01136	WO9901020-A2	Cancer
HIBCW32	Y01138	WO9901020-A2	Cancer
HLHCI58	Y01139	WO9901020-A2	Cancer
HLMFG37	Y01140	WO9901020-A2	Cancer
HBCAO31	Y01141	WO9901020-A2	Cancer
HRDDR94	Y01142	WO9901020-A2	Cancer
HSIDY06	Y01143	WO9901020-A2	Cancer
HSKGO49	Y01144	WO9901020-A2	Cancer
HBXGM67	Y01146	WO9901020-A2	Neural/Sensory
HUFAC36	Y01147	WO9901020-A2	Cancer
HAGBZ81	Y01148	WO9901020-A2	Excretory, Neural/Sensory
HBJCK69	Y01150	WO9901020-A2	Immune/Hematopoietic
HCACJ81	Y01152	WO9901020-A2	Cancer
HBMWP47	Y01154	WO9901020-A2	Cancer

HIBCW32	Y01155	WO9901020-A2	Cancer
HCACJ81	Y01158	WO9901020-A2	Cancer
HCE3F11	Y01206	WO9901020-A2	Digestive, Neural/Sensory
HSXBV35	Y01383	WO9903990-A1	Neural/Sensory
HTGAW51	Y01385	WO9903990-A1	Immune/Hematopoietic
HTEGM07	Y01387	WO9903990-A1	Cancer
HTWFK09	Y01389	WO9903990-A1	Immune/Hematopoietic
HTXDJ88	Y01390	WO9903990-A1	Immune/Hematopoietic
HUSGC54	Y01391	WO9903990-A1	Cardiovascular, Immune/Hematopoietic, Neural/Sensory
HWTAD49	Y01392	WO9903990-A1	Cancer
HWTBK81	Y01393	WO9903990-A1	Cancer
HACBH16	Y01394	WO9903990-A1	Connective/Epithelial
HCUDE16	Y01395	WO9903990-A1	Cancer
HLWBZ73	Y01397	WO9903990-A1	Cancer
HNGFR75	Y01398	WO9903990-A1	Immune/Hematopoietic
HNHFO29	Y01400	WO9903990-A1	Immune/Hematopoietic
HONAH29	Y01401	WO9903990-A1	Cancer
HGCAB62	Y01402	WO9903990-A1	Cancer
HAQBI01	Y01403	WO9903990-A1	Cancer
HDPBA48	Y01405	WO9903990-A1	Immune/Hematopoietic
HE6CT22	Y01406	WO9903990-A1	Mixed Fetal, Reproductive
HE6CT56	Y01407	WO9903990-A1	Mixed Fetal, Neural/Sensory
HE6CY88	Y01408	WO9903990-A1	Mixed Fetal
HE9FT63	Y01409	WO9903990-A1	Cancer
HE9ND43	Y01410	WO9903990-A1	Digestive, Mixed Fetal, Neural/Sensory
HERAN63	Y01411	WO9903990-A1	Connective/Epithelial, Reproductive
HHBAG14	Y01413	WO9903990-A1	Cancer
HMAU73	Y01417	WO9903990-A1	Cancer
HMEAI74	Y01418	WO9903990-A1	Cancer
HPMBZ15	Y01421	WO9903990-A1	Cancer
HROAE16	Y01422	WO9903990-A1	Cancer
HSAYM40	Y01423	WO9903990-A1	Immune/Hematopoietic
HTBAB28	Y01426	WO9903990-A1	Immune/Hematopoietic
HAQBT52	Y01428	WO9903990-A1	Cancer
HBIBL04	Y01429	WO9903990-A1	Cancer
HBICI95	Y01430	WO9903990-A1	Cancer
HBNBQ61	Y01431	WO9903990-A1	Reproductive
HE2ID06	Y01432	WO9903990-A1	Cancer
HEBCM63	Y01433	WO9903990-A1	Cancer
HFFAK76	Y01434	WO9903990-A1	Neural/Sensory
HFRBF28	Y01435	WO9903990-A1	Neural/Sensory
HGBHM89	Y01436	WO9903990-A1	Cancer
HLMBP18	Y01437	WO9903990-A1	Immune/Hematopoietic
HAGFG63	Y01439	WO9903990-A1	Cancer
HODAZ55	Y01440	WO9903990-A1	Reproductive
HODDF08	Y01441	WO9903990-A1	Reproductive
HOSDK95	Y01442	WO9903990-A1	Musculoskeletal
HOUAR65	Y01443	WO9903990-A1	Connective/Epithelial



HSVAC77	Y01444	WO9903990-A1	Cancer
HRS MC69	Y01445	WO9903990-A1	Cancer
HNECF34	Y01446	WO9903990-A1	Immune/Hematopoietic
HAQAI46	Y01447	WO9903990-A1	Cancer
HAQBI01	Y01448	WO9903990-A1	Cancer
HJAAT30	Y01453	WO9903990-A1	Cancer
HPMJI58	Y01458	WO9903990-A1	Cancer
HNECF34	Y01477	WO9903990-A1	Immune/Hematopoietic
HCEIA77	Y02650	WO9902546-A1	Cancer
HCFCE10	Y02651	WO9902546-A1	Immune/Hematopoietic
HCHAA63	Y02653	WO9902546-A1	Cancer
HCNSP40	Y02654	WO9902546-A1	Cancer
HDAAC10	Y02655	WO9902546-A1	Cardiovascular, Digestive, Reproductive
HE8CV18	Y02656	WO9902546-A1	Cancer
HFGAL10	Y02659	WO9902546-A1	Mixed Fetal, Neural/Sensory, Reproductive
HFKEB72	Y02660	WO9902546-A1	Excretory, Reproductive
HFTCU19	Y02661	WO9902546-A1	Cancer
HFXHN31	Y02662	WO9902546-A1	Neural/Sensory
HCEND31	Y02663	WO9902546-A1	Cancer
HJABB94	Y02664	WO9902546-A1	Cancer
HLTAI94	Y02666	WO9902546-A1	Immune/Hematopoietic, Reproductive
HMELR03	Y02668	WO9902546-A1	Cardiovascular, Immune/Hematopoietic, Mixed Fetal
HMKAH10	Y02669	WO9902546-A1	Neural/Sensory, Reproductive
HMKCW19	Y02670	WO9902546-A1	Cancer
HMSJW18	Y02671	WO9902546-A1	Cancer
HMWGY01	Y02672	WO9902546-A1	Immune/Hematopoietic
HNFID82	Y02673	WO9902546-A1	Immune/Hematopoietic
HNFIG36	Y02674	WO9902546-A1	Immune/Hematopoietic
HNGEV29	Y02675	WO9902546-A1	Immune/Hematopoietic
HNGJJ65	Y02677	WO9902546-A1	Immune/Hematopoietic
HSLBF69	Y02687	WO9902546-A1	Immune/Hematopoietic, Musculoskeletal, Reproductive
HSVBH58	Y02689	WO9902546-A1	Cancer
HTADX17	Y02692	WO9902546-A1	Immune/Hematopoietic, Reproductive
HTDAD22	Y02693	WO9902546-A1	Cancer
HTEDS39	Y02694	WO9902546-A1	Cancer
HTEHHS3	Y02695	WO9902546-A1	Reproductive
HTLDP69	Y02696	WO9902546-A1	Cancer
HTPCS60	Y02698	WO9902546-A1	Cancer
HUKBH05	Y02699	WO9902546-A1	Cancer
HADFK68	Y02703	WO9902546-A1	Connective/Epithelial
HADGG19	Y02704	WO9902546-A1	Connective/Epithelial, Musculoskeletal
HAEAV45	Y02705	WO9902546-A1	Cardiovascular, Reproductive

HARAA15	Y02706	WO9902546-A1	Neural/Sensory
HBAFQ54	Y02708	WO9902546-A1	Cancer
HBIAS26	Y02710	WO9902546-A1	Cancer
HBJFU48	Y02711	WO9902546-A1	Immune/Hematopoietic
HBJFV28	Y02712	WO9902546-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HBMWB01	Y02713	WO9902546-A1	Immune/Hematopoietic
HBMXN79	Y02714	WO9902546-A1	Cancer
HBMXP84	Y02715	WO9902546-A1	Cancer
HCFMM26	Y02716	WO9902546-A1	Immune/Hematopoietic
HCNAV36	Y02717	WO9902546-A1	Cancer
HCNSB01	Y02718	WO9902546-A1	Cancer
HCRBR74	Y02719	WO9902546-A1	Cancer
HCUBN59	Y02720	WO9902546-A1	Immune/Hematopoietic
HCUDB38	Y02721	WO9902546-A1	Immune/Hematopoietic
HCUFZ62	Y02722	WO9902546-A1	Immune/Hematopoietic
HDPCO25	Y02724	WO9902546-A1	Immune/Hematopoietic
HDPHI51	Y02725	WO9902546-A1	Immune/Hematopoietic
HE9FE83	Y02727	WO9902546-A1	Immune/Hematopoietic, Mixed Fetal, Musculoskeletal
HFPDE69	Y02731	WO9902546-A1	Neural/Sensory
HGBGV89	Y02732	WO9902546-A1	Digestive
HGLDE38	Y02733	WO9902546-A1	Cancer
HHGDU58	Y02734	WO9902546-A1	Musculoskeletal
HHTLF25	Y02735	WO9902546-A1	Cancer
HKAFB88	Y02737	WO9902546-A1	Cancer
HLHFP03	Y02738	WO9902546-A1	Respiratory
HLYAF80	Y02741	WO9902546-A1	Immune/Hematopoietic
HMKDD07	Y02743	WO9902546-A1	Immune/Hematopoietic, Neural/Sensory
HMKDS08	Y02744	WO9902546-A1	Excretory, Neural/Sensory
HMSHM14	Y02745	WO9902546-A1	Immune/Hematopoietic
HMWDC28	Y02746	WO9902546-A1	Cancer
HNFIU96	Y02749	WO9902546-A1	Immune/Hematopoietic
HNGAX58	Y02751	WO9902546-A1	Immune/Hematopoietic
HNHDL85	Y02754	WO9902546-A1	Immune/Hematopoietic
HNHFU59	Y02755	WO9902546-A1	Immune/Hematopoietic
HNHFW22	Y02756	WO9902546-A1	Immune/Hematopoietic
HODCJ90	Y02758	WO9902546-A1	Cancer
HPEBT80	Y02760	WO9902546-A1	Reproductive
HSDAG05	Y02761	WO9902546-A1	Cancer
HSDGR57	Y02762	WO9902546-A1	Cancer
HSDJJ82	Y02763	WO9902546-A1	Neural/Sensory
HSDZM95	Y02764	WO9902546-A1	Cancer
HSKYU29	Y02766	WO9902546-A1	Cancer
HSNAA55	Y02767	WO9902546-A1	Cancer
HSQFP66	Y02768	WO9902546-A1	Excretory, Neural/Sensory
HJPBB94	Y02769	WO9902546-A1	Cancer
HSSJN64	Y02770	WO9902546-A1	Musculoskeletal
HSVAQ28	Y02771	WO9902546-A1	Cancer
HFTCU19	Y02775	WO9902546-A1	Cancer
HGLAM53	Y02777	WO9902546-A1	Immune/Hematopoietic,

			Neural/Sensory, Reproductive
HMKCW19	Y02778	WO9902546-A1	Cancer
HMWGY01	Y02779	WO9902546-A1	Immune/Hematopoietic
HSOAH66	Y02782	WO9902546-A1	Digestive
HUKEX85	Y02785	WO9902546-A1	Musculoskeletal, Reproductive
HSIDI15	Y02975	WO9902546-A1	Digestive, Immune/Hematopoietic
HUKEJ46	Y03850	WO9909198-A1	Digestive, Reproductive
HPASD50	Y04120	WO9909161-A1	Cancer
HPASD50	Y04121	WO9909161-A1	Cancer
HSDIT06	Y04295	WO9910363-A1	Neural/Sensory, Reproductive
HSKEI54	Y04297	WO9910363-A1	Cancer
HTNAG39	Y04300	WO9910363-A1	Cancer
HTODL90	Y04301	WO9910363-A1	Immune/Hematopoietic
HTWDC20	Y04302	WO9910363-A1	Immune/Hematopoietic
HUFAT34	Y04303	WO9910363-A1	Cancer
HAICJ23	Y04305	WO9910363-A1	Cancer
HAPOF67	Y04306	WO9910363-A1	Digestive, Excretory, Musculoskeletal
HE8DG53	Y04308	WO9910363-A1	Cancer
HFSAY85	Y04309	WO9910363-A1	Cancer
HHEDD41	Y04310	WO9910363-A1	Cancer
HKCSO46	Y04311	WO9910363-A1	Cancer
HKGAV60	Y04312	WO9910363-A1	Cancer
HKGDJ66	Y04314	WO9910363-A1	Cancer
HMC DK27	Y04315	WO9910363-A1	Cancer
HMC DX48	Y04316	WO9910363-A1	Cancer
HMIAS24	Y04317	WO9910363-A1	Immune/Hematopoietic, Neural/Sensory
HNFE G11	Y04318	WO9910363-A1	Immune/Hematopoietic
HNGEP09	Y04319	WO9910363-A1	Immune/Hematopoietic
HTXKK52	Y04320	WO9910363-A1	Immune/Hematopoietic
HNGJP90	Y04321	WO9910363-A1	Immune/Hematopoietic
HFVIF40	Y06461	WO9931116-A1	Cancer
HFCCQ50	Y06462	WO9931116-A1	Cancer
HDPIE88	Y06511	WO9936565-A1	Cancer
HCWHN10	Y07746	WO9909155-A1	Immune/Hematopoietic
HDTAE40	Y07748	WO9909155-A1	Digestive, Immune/Hematopoietic
HE8DY08	Y07751	WO9909155-A1	Cancer
HE9ND27	Y07753	WO9909155-A1	Cancer
HCE3G69	Y07754	WO9909155-A1	Cancer
HEAAX57	Y07755	WO9909155-A1	Reproductive
HEMGD15	Y07759	WO9909155-A1	Cancer
HEQBR95	Y07760	WO9909155-A1	Cancer
HFKGE44	Y07764	WO9909155-A1	Cancer
HFPCY39	Y07765	WO9909155-A1	Cancer
HFXDX75	Y07768	WO9909155-A1	Neural/Sensory
HFXJC53	Y07770	WO9909155-A1	Neural/Sensory, Reproductive, Respiratory

HFXJW48	Y07771	WO9909155-A1	Cancer
HGBGO11	Y07772	WO9909155-A1	Cancer
HGBHM10	Y07773	WO9909155-A1	Cancer
HSWAY58	Y07776	WO9909155-A1	Cancer
HTEIM65	Y07779	WO9909155-A1	Immune/Hematopoietic, Reproductive
HTHBX95	Y07780	WO9909155-A1	Cancer
HTLDQ56	Y07781	WO9909155-A1	Reproductive
HTOFU06	Y07782	WO9909155-A1	Immune/Hematopoietic, Musculoskeletal
HTWEE31	Y07785	WO9909155-A1	Immune/Hematopoietic
HUSAO56	Y07789	WO9909155-A1	Cancer
HUSIJ08	Y07790	WO9909155-A1	Cancer
HAGBD57	Y07791	WO9909155-A1	Excretory, Neural/Sensory
HBAFA04	Y07793	WO9909155-A1	Cancer
HBJES16	Y07794	WO9909155-A1	Cancer
HCEFZ05	Y07796	WO9909155-A1	Mixed Fetal, Neural/Sensory
HCFMX95	Y07797	WO9909155-A1	Immune/Hematopoietic
HLYHA71	Y07798	WO9909155-A1	Cancer
HEBAL06	Y07800	WO9909155-A1	Neural/Sensory
HEIAB33	Y07801	WO9909155-A1	Cancer
HEPBC02	Y07802	WO9909155-A1	Cancer
HFTBY96	Y07803	WO9909155-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HKMMM61	Y07804	WO9909155-A1	Cancer
HLQBQ38	Y07806	WO9909155-A1	Cancer
HMKCP66	Y07807	WO9909155-A1	Neural/Sensory
HWTAL40	Y07808	WO9909155-A1	Cancer
HNHDR03	Y07809	WO9909155-A1	Immune/Hematopoietic
HNHFH41	Y07810	WO9909155-A1	Immune/Hematopoietic
HNHFI81	Y07811	WO9909155-A1	Immune/Hematopoietic
HOSFQ28	Y07812	WO9909155-A1	Cancer
HPRAL78	Y07813	WO9909155-A1	Cancer
HEAAA85	Y07814	WO9909155-A1	Cancer
HDTAR09	Y07816	WO9909155-A1	Cancer
HLYHA71	Y07843	WO9909155-A1	Cancer
HCWCH14	Y07852	WO9918208-A1	Immune/Hematopoietic
HE9MI43	Y07855	WO9918208-A1	Cancer
HE2PI29	Y07859	WO9918208-A1	Cancer
HLHDP83	Y07862	WO9918208-A1	Cancer
HSIAS17	Y07863	WO9918208-A1	Cancer
HOSDG32	Y07866	WO9918208-A1	Cancer
HMUBU59	Y07867	WO9918208-A1	Cancer
HWTCE21	Y07868	WO9918208-A1	Cancer
HFIUM15	Y07869	WO9918208-A1	Cancer
HTLAF13	Y07872	WO9918208-A1	Reproductive
HTLFI93	Y07873	WO9918208-A1	Immune/Hematopoietic, Reproductive, Respiratory
HBXGI20	Y07874	WO9918208-A1	Cancer
HTPBH21	Y07875	WO9918208-A1	Connective/Epithelial, Digestive, Reproductive

HSQAB87	Y07876	WO9918208-A1	Cancer
HTEDJ94	Y07877	WO9918208-A1	Cancer
HKMLM11	Y07878	WO9918208-A1	Cancer
HNEAC05	Y07879	WO9918208-A1	Immune/Hematopoietic
HETEW02	Y07880	WO9918208-A1	Cancer
HLMCA59	Y07882	WO9918208-A1	Immune/Hematopoietic
HOAAC90	Y07883	WO9918208-A1	Musculoskeletal
HMEJQ68	Y07884	WO9918208-A1	Cancer
HRTAE58	Y07888	WO9918208-A1	Digestive, Reproductive
HSKNB54	Y07889	WO9918208-A1	Cancer
HSKNT34	Y07890	WO9918208-A1	Cancer
HTEDY42	Y07891	WO9918208-A1	Reproductive
HTLAA40	Y07892	WO9918208-A1	Reproductive
HTNBO91	Y07893	WO9918208-A1	Cancer
H6BSD90	Y07894	WO9918208-A1	Cancer
HBJBQ35	Y07895	WO9918208-A1	Immune/Hematopoietic
HCE1Q89	Y07896	WO9918208-A1	Immune/Hematopoietic, Neural/Sensory
HCNSB61	Y07897	WO9918208-A1	Digestive, Immune/Hematopoietic
HCDBO20	Y07898	WO9918208-A1	Musculoskeletal, Respiratory
HBNW17	Y07899	WO9918208-A1	Reproductive
HEAAH81	Y07902	WO9918208-A1	Cancer
HEBAE88	Y07903	WO9918208-A1	Immune/Hematopoietic, Neural/Sensory
HFXGV31	Y07904	WO9918208-A1	Neural/Sensory
HEAAJ57	Y07905	WO9918208-A1	Immune/Hematopoietic, Reproductive
HCFMV71	Y07906	WO9918208-A1	Immune/Hematopoietic
HGBDL30	Y07910	WO9918208-A1	Digestive
HFKEN81	Y07911	WO9918208-A1	Excretory, Neural/Sensory
HFPCX36	Y07912	WO9918208-A1	Neural/Sensory
HFRAN90	Y07913	WO9918208-A1	Neural/Sensory
HHGBO91	Y07915	WO9918208-A1	Digestive, Reproductive
HERAN54	Y07917	WO9918208-A1	Connective/Epithelial
HFXDE67	Y07918	WO9918208-A1	Neural/Sensory
HFFAD59	Y07921	WO9918208-A1	Neural/Sensory
HMDAE65	Y07923	WO9918208-A1	Neural/Sensory
HMEGF92	Y07925	WO9918208-A1	Cardiovascular
HNGIK36	Y07926	WO9918208-A1	Immune/Hematopoietic
HMEJJ27	Y07927	WO9918208-A1	Cardiovascular
HNHCY64	Y07928	WO9918208-A1	Immune/Hematopoietic
HNHCY94	Y07929	WO9918208-A1	Immune/Hematopoietic
HNEBN76	Y07930	WO9918208-A1	Immune/Hematopoietic, Reproductive, Respiratory
HMEFT54	Y07931	WO9918208-A1	Cardiovascular, Musculoskeletal, Reproductive
HLQBE09	Y07932	WO9918208-A1	Digestive
HMWBC11	Y07933	WO9918208-A1	Immune/Hematopoietic
HNGJR78	Y07934	WO9918208-A1	Immune/Hematopoietic

HNGDP26	Y07935	WO9918208-A1	Immune/Hematopoietic
HNGJH63	Y07936	WO9918208-A1	Immune/Hematopoietic
HMDAL04	Y07937	WO9918208-A1	Neural/Sensory
HMWHX28	Y07938	WO9918208-A1	Immune/Hematopoietic
HNHGB09	Y07942	WO9918208-A1	Immune/Hematopoietic
HNHHA15	Y07943	WO9918208-A1	Immune/Hematopoietic
HHGDC01	Y07944	WO9918208-A1	Cancer
HMWGU74	Y07945	WO9918208-A1	Immune/Hematopoietic
HNGCF72	Y07946	WO9918208-A1	Immune/Hematopoietic
HOACB38	Y07947	WO9918208-A1	Musculoskeletal
HLMFD11	Y07950	WO9918208-A1	Immune/Hematopoietic
HLYBA22	Y07952	WO9918208-A1	Immune/Hematopoietic
HCWCH14	Y07953	WO9918208-A1	Immune/Hematopoietic
HBMWF85	Y10797	WO9907891-A1	Immune/Hematopoietic
HCDEJ37	Y10798	WO9907891-A1	Immune/Hematopoietic, Musculoskeletal
HCE3L18	Y10799	WO9907891-A1	Neural/Sensory
HCYBI42	Y10800	WO9907891-A1	Cancer
HE6FB81	Y10801	WO9907891-A1	Mixed Fetal
HFAMB72	Y10802	WO9907891-A1	Cancer
HFCDW42	Y10803	WO9907891-A1	Cancer
HFPAE26	Y10804	WO9907891-A1	Neural/Sensory
HFXJM91	Y10805	WO9907891-A1	Cancer
HJABX32	Y10807	WO9907891-A1	Cancer
HJMBW30	Y10808	WO9907891-A1	Cancer
HSVAT02	Y10810	WO9907891-A1	Cancer
HSVBM90	Y10811	WO9907891-A1	Cancer
HSYBL17	Y10812	WO9907891-A1	Cancer
HTEBI28	Y10813	WO9907891-A1	Reproductive
HTPDS14	Y10814	WO9907891-A1	Cancer
HTSGG36	Y10815	WO9907891-A1	Cancer
HODCJ27	Y10816	WO9907891-A1	Cancer
HTXDB52	Y10819	WO9907891-A1	Immune/Hematopoietic, Musculoskeletal
HTXDP60	Y10820	WO9907891-A1	Cancer
HTXEB42	Y10821	WO9907891-A1	Cancer
HBAFZ29	Y10824	WO9907891-A1	Cancer
HBAHA77	Y10826	WO9907891-A1	Cancer
HBJEW84	Y10827	WO9907891-A1	Immune/Hematopoietic
HBJFE12	Y10828	WO9907891-A1	Immune/Hematopoietic
HCFBM53	Y10830	WO9907891-A1	Cancer
HCFBQ81	Y10831	WO9907891-A1	Immune/Hematopoietic
HCFCI07	Y10832	WO9907891-A1	Immune/Hematopoietic
HCFDD76	Y10833	WO9907891-A1	Cancer
HCFMJ81	Y10834	WO9907891-A1	Cancer
HCFQG45	Y10835	WO9907891-A1	Cancer
HCUBN71	Y10836	WO9907891-A1	Immune/Hematopoietic, Reproductive
HHEMA75	Y10837	WO9907891-A1	Cancer
HHPTJ65	Y10839	WO9907891-A1	Cardiovascular, Musculoskeletal, Neural/Sensory
HHSDR11	Y10840	WO9907891-A1	Neural/Sensory
HLJDQ62	Y10842	WO9907891-A1	Cancer
HKGBS49	Y10843	WO9907891-A1	Reproductive

HKISA27	Y10844	WO9907891-A1	Cancer
HKIXE06	Y10845	WO9907891-A1	Cancer
HKMMV77	Y10846	WO9907891-A1	Excretory, Reproductive
HLYAB80	Y10850	WO9907891-A1	Cancer
HLYAG19	Y10851	WO9907891-A1	Digestive, Immune/Hematopoietic
HLYBY48	Y10852	WO9907891-A1	Immune/Hematopoietic
HMUAW28	Y10853	WO9907891-A1	Immune/Hematopoietic, Musculoskeletal
HMWHC36	Y10854	WO9907891-A1	Cancer
HNFIS82	Y10856	WO9907891-A1	Digestive, Immune/Hematopoietic, Reproductive
HNGBO16	Y10859	WO9907891-A1	Immune/Hematopoietic
HNGBQ90	Y10860	WO9907891-A1	Cancer
HNGBV72	Y10861	WO9907891-A1	Immune/Hematopoietic
HNGEG08	Y10863	WO9907891-A1	Immune/Hematopoietic
HNGFI02	Y10864	WO9907891-A1	Immune/Hematopoietic
HNGGF85	Y10865	WO9907891-A1	Immune/Hematopoietic
HNGHM75	Y10866	WO9907891-A1	Immune/Hematopoietic
HNGIN84	Y10867	WO9907891-A1	Digestive, Endocrine, Immune/Hematopoietic
HNGJH08	Y10869	WO9907891-A1	Immune/Hematopoietic
HNHAH01	Y10870	WO9907891-A1	Immune/Hematopoietic
HNHET53	Y10871	WO9907891-A1	Immune/Hematopoietic
HOABP21	Y10872	WO9907891-A1	Cancer
HODAA12	Y10873	WO9907891-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HFKDH44	Y10874	WO9907891-A1	Cancer
HOVAP06	Y10875	WO9907891-A1	Reproductive
HPEAE34	Y10876	WO9907891-A1	Reproductive
HPTRO86	Y10877	WO9907891-A1	Cancer
HSAXJ60	Y10878	WO9907891-A1	Immune/Hematopoietic
HSAXM32	Y10879	WO9907891-A1	Cancer
HSKND71	Y10882	WO9907891-A1	Mixed Fetal, Musculoskeletal, Neural/Sensory
HSOAC84	Y10883	WO9907891-A1	Digestive
HFKCF34	Y10884	WO9907891-A1	Cancer
HSAAO30	Y12916	WO9911293-A1	Cancer
HSQBL21	Y12917	WO9911293-A1	Cancer
HTEFU41	Y12919	WO9911293-A1	Immune/Hematopoietic, Reproductive
HDPSP54	Y12920	WO9911293-A1	Cancer
HELFQ07	Y12921	WO9911293-A1	Cancer
HBSAJ16	Y12923	WO9911293-A1	Connective/Epithelial, Musculoskeletal, Reproductive
HCEOC41	Y12924	WO9911293-A1	Cancer
HCUEO60	Y12926	WO9911293-A1	Immune/Hematopoietic
HDHEB60	Y12927	WO9911293-A1	Cancer
HE6AJ31	Y12928	WO9911293-A1	Mixed Fetal
HFCED59	Y12929	WO9911293-A1	Immune/Hematopoietic,

HFJKJ03	Y12931	WO9911293-A1	Neural/Sensory Cardiovascular, Immune/Hematopoietic, Neural/Sensory
HHFDG44	Y12932	WO9911293-A1	Cardiovascular, Endocrine, Immune/Hematopoietic
HJACG02	Y12933	WO9911293-A1	Digestive, Immune/Hematopoietic
HKGAI54	Y12934	WO9911293-A1	Cancer
HKMAB92	Y12935	WO9911293-A1	Cancer
HLMFC54	Y12937	WO9911293-A1	Immune/Hematopoietic
HLWBZ21	Y12939	WO9911293-A1	Immune/Hematopoietic, Reproductive
HMJAX71	Y12940	WO9911293-A1	Neural/Sensory
HNECU95	Y12941	WO9911293-A1	Connective/Epithelial, Immune/Hematopoietic
HNFCCK41	Y12942	WO9911293-A1	Cancer
HNFDH08	Y12943	WO9911293-A1	Cancer
HNGEW65	Y12944	WO9911293-A1	Endocrine, Immune/Hematopoietic
HNHEN68	Y12946	WO9911293-A1	Immune/Hematopoietic
HNHFG05	Y12947	WO9911293-A1	Immune/Hematopoietic
HODBF19	Y12948	WO9911293-A1	Cancer
HOEBK34	Y12949	WO9911293-A1	Digestive, Musculoskeletal
HPBCC51	Y12950	WO9911293-A1	Cancer
HRGDC48	Y12951	WO9911293-A1	Immune/Hematopoietic, Musculoskeletal
HSDJB13	Y12952	WO9911293-A1	Cancer
HTEHR24	Y12953	WO9911293-A1	Cancer
HARAO51	Y12957	WO9911293-A1	Cancer
HATAA15	Y12958	WO9911293-A1	Cancer
HATCK44	Y12959	WO9911293-A1	Cancer
HBIAE26	Y12960	WO9911293-A1	Neural/Sensory, Reproductive
HBMXG32	Y12961	WO9911293-A1	Immune/Hematopoietic
HCDAT43	Y12963	WO9911293-A1	Cancer
HSLJB89	Y12964	WO9911293-A1	Cancer
HBAFC77	Y12966	WO9911293-A1	Cancer
HSAAO30	Y12969	WO9911293-A1	Cancer
HFCET92	Y14078	WO9921575-A1	Cancer
HSIDU19	Y14411	WO9919339-A1	Digestive
HPRSB76	Y14412	WO9919339-A1	Reproductive
HTEIL66	Y14413	WO9919339-A1	Reproductive
HSABG21	Y14415	WO9919339-A1	Cancer
HSAXB32	Y14416	WO9919339-A1	Immune/Hematopoietic
HPEAD48	Y14417	WO9919339-A1	Reproductive
HPVAB94	Y14418	WO9919339-A1	Reproductive
HSAXB81	Y14419	WO9919339-A1	Immune/Hematopoietic
HSLCU73	Y14421	WO9919339-A1	Musculoskeletal
HTEIP36	Y14423	WO9919339-A1	Reproductive
HYBAY77	Y14424	WO9919339-A1	Immune/Hematopoietic, Musculoskeletal, Reproductive
HROAE78	Y14425	WO9919339-A1	Digestive



HSVP17	Y14426	WO9919339-A1	Immune/Hematopoietic
HSIEA14	Y14427	WO9919339-A1	Digestive
HPEAD79	Y14430	WO9919339-A1	Reproductive
HRDED19	Y14431	WO9919339-A1	Musculoskeletal
HSAYS89	Y14432	WO9919339-A1	Immune/Hematopoietic
HTODK73	Y14433	WO9919339-A1	Cancer
HSVAM10	Y14434	WO9919339-A1	Cancer
HSPAA60	Y14439	WO9919339-A1	Digestive
HFAEF57	Y14440	WO9919339-A1	Neural/Sensory
HEGAH43	Y14441	WO9919339-A1	Digestive, Reproductive
HNGBX63	Y14443	WO9919339-A1	Immune/Hematopoietic
HE2AG50	Y14444	WO9919339-A1	Digestive, Mixed Fetal, Neural/Sensory
HCUIN80	Y14445	WO9919339-A1	Immune/Hematopoietic
HADCL29	Y14446	WO9919339-A1	Connective/Epithelial
HAPPS89	Y14447	WO9919339-A1	Cancer
HFGAH44	Y14448	WO9919339-A1	Cancer
HFIHZ96	Y14449	WO9919339-A1	Musculoskeletal
HFIUR10	Y14450	WO9919339-A1	Digestive, Immune/Hematopoietic, Musculoskeletal
HLDNA86	Y14451	WO9919339-A1	Cancer
HCUIO20	Y14453	WO9919339-A1	Immune/Hematopoietic
HLTEF12	Y14454	WO9919339-A1	Cancer
HCFBJ91	Y14455	WO9919339-A1	Immune/Hematopoietic
HHFHP90	Y14456	WO9919339-A1	Cardiovascular
HLYCQ48	Y14457	WO9919339-A1	Immune/Hematopoietic
HHLAB07	Y14458	WO9919339-A1	Digestive, Immune/Hematopoietic
HFOX30	Y14459	WO9919339-A1	Musculoskeletal
HBJEL68	Y14460	WO9919339-A1	Immune/Hematopoietic, Neural/Sensory
HFIUR35	Y14462	WO9919339-A1	Musculoskeletal
HFIZF58	Y16587	US5916769-A	Cancer
HNGDJ72	Y19443	WO9922243-A1	Immune/Hematopoietic
HNGEO29	Y19444	WO9922243-A1	Immune/Hematopoietic
HNHDL95	Y19445	WO9922243-A1	Immune/Hematopoietic
HAGDS35	Y19446	WO9922243-A1	Cancer
HNGEQ48	Y19447	WO9922243-A1	Immune/Hematopoietic
HNGDG40	Y19448	WO9922243-A1	Immune/Hematopoietic
HNGEN81	Y19449	WO9922243-A1	Immune/Hematopoietic
H2MAC30	Y19450	WO9922243-A1	Cancer
HNHFB16	Y19451	WO9922243-A1	Immune/Hematopoietic
HPFCL43	Y19452	WO9922243-A1	Cancer
HSATR82	Y19453	WO9922243-A1	Immune/Hematopoietic
HNHIC21	Y19455	WO9922243-A1	Immune/Hematopoietic
HOVCA92	Y19456	WO9922243-A1	Immune/Hematopoietic, Reproductive
HSDIL30	Y19458	WO9922243-A1	Neural/Sensory
HATDB65	Y19459	WO9922243-A1	Endocrine, Reproductive, Respiratory
HTTEA24	Y19461	WO9922243-A1	Digestive, Reproductive

HAGDS20	Y19462	WO9922243-A1	Neural/Sensory, Reproductive
HSDJM30	Y19463	WO9922243-A1	Digestive, Neural/Sensory
HNHEE88	Y19464	WO9922243-A1	Immune/Hematopoietic
HSLFD55	Y19465	WO9922243-A1	Musculoskeletal
HSAXJ29	Y19466	WO9922243-A1	Immune/Hematopoietic
HSFAM39	Y19467	WO9922243-A1	Reproductive
HADDZ85	Y19469	WO9922243-A1	Connective/Epithelial, Immune/Hematopoietic, Neural/Sensory
HDPCM26	Y19470	WO9922243-A1	Cancer
HSZAA13	Y19471	WO9922243-A1	Cancer
HDTBP04	Y19472	WO9922243-A1	Digestive, Immune/Hematopoietic
HHGCQ54	Y19473	WO9922243-A1	Cancer
HSNAB12	Y19474	WO9922243-A1	Cardiovascular
HBJID05	Y19475	WO9922243-A1	Immune/Hematopoietic
HSNBM49	Y19476	WO9922243-A1	Cancer
HJMBF77	Y19477	WO9922243-A1	Cancer
HJMBM38	Y19478	WO9922243-A1	Cancer
HHGCL33	Y19479	WO9922243-A1	Cancer
HCEWE20	Y19480	WO9922243-A1	Endocrine, Immune/Hematopoietic, Neural/Sensory
HCUHL13	Y19481	WO9922243-A1	Immune/Hematopoietic
HBJHO68	Y19482	WO9922243-A1	Immune/Hematopoietic
HCWDV84	Y19483	WO9922243-A1	Immune/Hematopoietic
HBXFC78	Y19484	WO9922243-A1	Cancer
HE2FI45	Y19485	WO9922243-A1	Cancer
HEOMG13	Y19486	WO9922243-A1	Digestive, Immune/Hematopoietic, Reproductive
HFAMH77	Y19487	WO9922243-A1	Cancer
HSVCF20	Y19488	WO9922243-A1	Cancer
HISAG02	Y19489	WO9922243-A1	Cancer
HCDAF84	Y19490	WO9922243-A1	Musculoskeletal
HHAAC17	Y19491	WO9922243-A1	Digestive, Musculoskeletal, Neural/Sensory
HEQAG39	Y19493	WO9922243-A1	Cancer
HKACH44	Y19494	WO9922243-A1	Cancer
HBNBG49	Y19495	WO9922243-A1	Cancer
HE2EN04	Y19496	WO9922243-A1	Cancer
HSVAA10	Y19497	WO9922243-A1	Cardiovascular
HFPBA88	Y19498	WO9922243-A1	Cancer
HHEBW54	Y19500	WO9922243-A1	Cancer
HFEBH21	Y19501	WO9922243-A1	Connective/Epithelial, Reproductive
HFTDZ36	Y19502	WO9922243-A1	Cancer
HGLAW96	Y19503	WO9922243-A1	Immune/Hematopoietic, Neural/Sensory
HKAFK41	Y19504	WO9922243-A1	Cancer
HOSEG51	Y19505	WO9922243-A1	Endocrine, Immune/Hematopoietic, Musculoskeletal

HTEJT39	Y19506	WO9922243-A1	Neural/Sensory, Reproductive
HPTRH45	Y19507	WO9922243-A1	Cancer
HDHMA72	Y19508	WO9922243-A1	Cancer
HNTBL27	Y19509	WO9922243-A1	Cancer
HCFMX35	Y19510	WO9922243-A1	Immune/Hematopoietic
HMUAO21	Y19512	WO9922243-A1	Cancer
HCHAR28	Y19513	WO9922243-A1	Cancer
HLYDU25	Y19514	WO9922243-A1	Immune/Hematopoietic
HOEJH89	Y19515	WO9922243-A1	Cancer
HPFDG48	Y19516	WO9922243-A1	Immune/Hematopoietic, Reproductive
HWTBM18	Y19517	WO9922243-A1	Immune/Hematopoietic, Musculoskeletal
HCFOM18	Y19518	WO9922243-A1	Immune/Hematopoietic
HMWFO02	Y19519	WO9922243-A1	Immune/Hematopoietic
HNGAV42	Y19520	WO9922243-A1	Immune/Hematopoietic
HSDSE75	Y19522	WO9922243-A1	Musculoskeletal, Neural/Sensory, Respiratory
HLMFD85	Y19523	WO9922243-A1	Immune/Hematopoietic
HLQCJ74	Y19524	WO9922243-A1	Digestive, Immune/Hematopoietic
HTEFU65	Y19526	WO9922243-A1	Excretory, Immune/Hematopoietic, Reproductive
HLYBF22	Y19527	WO9922243-A1	Immune/Hematopoietic, Mixed Fetal
HMDAP35	Y19528	WO9922243-A1	Neural/Sensory
HWBCN75	Y19530	WO9922243-A1	Cancer
HROAH06	Y19531	WO9922243-A1	Digestive, Immune/Hematopoietic
HSAXA83	Y19532	WO9922243-A1	Immune/Hematopoietic
HSDJE10	Y19533	WO9922243-A1	Cancer
HBAMA40	Y19534	WO9922243-A1	Excretory
HBAMB34	Y19535	WO9922243-A1	Excretory, Reproductive
HCWKC15	Y19536	WO9922243-A1	Immune/Hematopoietic
HDTDM65	Y19537	WO9922243-A1	Cancer
HMMBF71	Y19538	WO9922243-A1	Immune/Hematopoietic
HPBDH41	Y19539	WO9922243-A1	Immune/Hematopoietic, Musculoskeletal
HPBEN24	Y19540	WO9922243-A1	Cancer
HCUIM65	Y19541	WO9922243-A1	Cancer
HKNAA95	Y19542	WO9922243-A1	Digestive, Excretory, Immune/Hematopoietic
HKIYH57	Y19543	WO9922243-A1	Cancer
HBJMG49	Y19546	WO9922243-A1	Immune/Hematopoietic
H6EDC19	Y19547	WO9922243-A1	Cancer
HSKHZ81	Y19548	WO9922243-A1	Cancer
HBJFX78	Y19549	WO9922243-A1	Cancer
HEMFS60	Y19550	WO9922243-A1	Cancer
HKACB56	Y19551	WO9922243-A1	Connective/Epithelial
HTXJX80	Y19552	WO9922243-A1	Digestive, Immune/Hematopoietic

HAFBD61	Y19553	WO9922243-A1	Cancer
HBJJU28	Y19554	WO9922243-A1	Immune/Hematopoietic, Neural/Sensory
HNHEI47	Y19555	WO9922243-A1	Immune/Hematopoietic
HPMFY74	Y19556	WO9922243-A1	Reproductive
HL YAP91	Y19559	WO9922243-A1	Digestive, Immune/Hematopoietic, Reproductive
HSKNB56	Y19560	WO9922243-A1	Cancer
HHGCW91	Y19561	WO9922243-A1	Digestive, Immune/Hematopoietic
HKIYE96	Y19562	WO9922243-A1	Excretory
HL YAN59	Y19563	WO9922243-A1	Immune/Hematopoietic
HNEEE24	Y19564	WO9922243-A1	Immune/Hematopoietic
HAPRK85	Y19565	WO9922243-A1	Cancer
HLTEJ06	Y19566	WO9922243-A1	Immune/Hematopoietic
HMEKT48	Y19567	WO9922243-A1	Cancer
HNGHR74	Y19568	WO9922243-A1	Immune/Hematopoietic
HNHED17	Y19569	WO9922243-A1	Immune/Hematopoietic
HNHEP59	Y19570	WO9922243-A1	Immune/Hematopoietic
HNHFJ25	Y19571	WO9922243-A1	Immune/Hematopoietic
HCPAA69	Y19572	WO9922243-A1	Neural/Sensory
HEAAR07	Y19573	WO9922243-A1	Reproductive
HHGDW43	Y19574	WO9922243-A1	Cancer
HHSDX28	Y19575	WO9922243-A1	Immune/Hematopoietic, Neural/Sensory
HE8ER60	Y19576	WO9922243-A1	Cancer
HMEJQ66	Y19577	WO9922243-A1	Cardiovascular
HRDAD66	Y19578	WO9922243-A1	Cancer
HCMST14	Y19579	WO9922243-A1	Cancer
HCEBA03	Y19580	WO9922243-A1	Neural/Sensory
HJAAM10	Y19582	WO9922243-A1	Cancer
HOHCC74	Y19584	WO9922243-A1	Cancer
HPMFY57	Y19585	WO9922243-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HF XDN63	Y19586	WO9922243-A1	Neural/Sensory
HADCL76	Y19587	WO9922243-A1	Cancer
HMMAS76	Y19588	WO9922243-A1	Endocrine, Immune/Hematopoietic
HMKCG09	Y19589	WO9922243-A1	Digestive, Endocrine, Neural/Sensory
HFPBA88	Y19590	WO9922243-A1	Cancer
HMIAH29	Y19596	WO9922243-A1	Cancer
HEMFS60	Y19757	WO9922243-A1	Cancer
HDPVA94	Y25708	WO9938882-A1	Cancer
HDPNE25	Y25709	WO9938882-A1	Cancer
HASCG84	Y25711	WO9938881-A1	Cancer
HDPCY37	Y25712	WO9938881-A1	Cancer
HHEBB10	Y25713	WO9938881-A1	Cancer
HNGJA38	Y25714	WO9938881-A1	Immune/Hematopoietic
HHENL07	Y25715	WO9938881-A1	Immune/Hematopoietic
HKADQ91	Y25716	WO9938881-A1	Cancer
HPMCV18	Y25717	WO9938881-A1	Musculoskeletal, Reproductive

HKGAK22	Y25718	WO9938881-A1	Endocrine, Excretory, Neural/Sensory
HTEHU31	Y25719	WO9938881-A1	Cancer
HFXAM76	Y25720	WO9938881-A1	Cancer
HFXDZ79	Y25721	WO9938881-A1	Neural/Sensory
HOHBC68	Y25722	WO9938881-A1	Cancer
HSVAM81	Y25723	WO9938881-A1	Cancer
HTXDG40	Y25724	WO9938881-A1	Immune/Hematopoietic
HE2FC81	Y25725	WO9938881-A1	Mixed Fetal
HJACE05	Y25726	WO9938881-A1	Cancer
HADCW30	Y25727	WO9938881-A1	Connective/Epithelial
HBMDK25	Y25728	WO9938881-A1	Immune/Hematopoietic
HFXKK25	Y25729	WO9938881-A1	Cancer
HHEMO80	Y25730	WO9938881-A1	Immune/Hematopoietic
HNGEJ53	Y25731	WO9938881-A1	Immune/Hematopoietic
HTBAA70	Y25732	WO9938881-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive
HSAYB43	Y25734	WO9938881-A1	Immune/Hematopoietic
HSLDS32	Y25735	WO9938881-A1	Cancer
HMAIV27	Y25736	WO9938881-A1	Cancer
HSQEH50	Y25737	WO9938881-A1	Cancer
HKMMU22	Y25738	WO9938881-A1	Excretory
HKMMD13	Y25739	WO9938881-A1	Excretory
HLDNK64	Y25740	WO9938881-A1	Cancer
HRDES01	Y25741	WO9938881-A1	Musculoskeletal
HDTDZ50	Y25742	WO9938881-A1	Cancer
HETAB45	Y25743	WO9938881-A1	Cancer
HFPBD47	Y25744	WO9938881-A1	Cancer
HJMBI18	Y25745	WO9938881-A1	Cancer
HFXHK73	Y25746	WO9938881-A1	Neural/Sensory
HJMBT65	Y25747	WO9938881-A1	Cancer
HWHGZ26	Y25748	WO9938881-A1	Cancer
HADFY83	Y25749	WO9938881-A1	Cancer
HBMTV78	Y25750	WO9938881-A1	Digestive, Immune/Hematopoietic
HTXJM03	Y25751	WO9938881-A1	Cancer
HUSAT94	Y25752	WO9938881-A1	Cancer
HCUEN88	Y25753	WO9938881-A1	Immune/Hematopoietic
HCE3F70	Y25754	WO9938881-A1	Cancer
HCE5F43	Y25755	WO9938881-A1	Cancer
HL2AC08	Y25756	WO9938881-A1	Cancer
HCNSM70	Y25757	WO9938881-A1	Cancer
HDPTQ73	Y25758	WO9938881-A1	Cancer
HTODG13	Y25759	WO9938881-A1	Digestive, Immune/Hematopoietic, Reproductive
HE8DR25	Y25760	WO9938881-A1	Excretory, Mixed Fetal, Neural/Sensory
HSAAO65	Y25761	WO9938881-A1	Cancer
HKGDE09	Y25762	WO9938881-A1	Cancer
HMVBS69	Y25763	WO9938881-A1	Cardiovascular, Immune/Hematopoietic
HSIDU42	Y25764	WO9938881-A1	Cancer

HSKCT36	Y25765	WO9938881-A1	Cancer
HSXBU59	Y25766	WO9938881-A1	Immune/Hematopoietic, Neural/Sensory
HSSGG82	Y25767	WO9938881-A1	Cancer
HE8CH92	Y25768	WO9938881-A1	Cancer
HYBAR01	Y25769	WO9938881-A1	Musculoskeletal
HTLEF73	Y25770	WO9938881-A1	Cancer
HEOMW84	Y25771	WO9938881-A1	Connective/Epithelial, Immune/Hematopoietic
HKGAR66	Y25772	WO9938881-A1	Cancer
HHPDX20	Y25773	WO9938881-A1	Neural/Sensory
HSICV24	Y25774	WO9938881-A1	Cancer
HCWBE20	Y25775	WO9938881-A1	Immune/Hematopoietic
HSXBM30	Y25776	WO9938881-A1	Cancer
HDPCY37	Y25778	WO9938881-A1	Cancer
HOSFQ65	Y25791	WO9938881-A1	Cancer
HSXBH24	Y25807	WO9938881-A1	Cancer
HUSIG64	Y27567	WO9924836-A1	Cancer
HATCI78	Y27568	WO9924836-A1	Endocrine
HSIDR70	Y27569	WO9924836-A1	Digestive
HFADD53	Y27570	WO9924836-A1	Excretory, Neural/Sensory
HPMGT51	Y27571	WO9924836-A1	Immune/Hematopoietic, Reproductive
HFVAB79	Y27572	WO9924836-A1	Cardiovascular, Digestive, Reproductive
HDTBP51	Y27573	WO9924836-A1	Digestive, Immune/Hematopoietic, Reproductive
HLHFR19	Y27574	WO9924836-A1	Neural/Sensory, Respiratory
HMEET96	Y27575	WO9924836-A1	Cancer
HTXCV12	Y27576	WO9924836-A1	Cancer
HCEFB70	Y27577	WO9924836-A1	Immune/Hematopoietic, Neural/Sensory
HDTAV25	Y27578	WO9924836-A1	Cancer
HSATA21	Y27579	WO9924836-A1	Immune/Hematopoietic
HKIXI03	Y27580	WO9924836-A1	Excretory
HDTDC56	Y27581	WO9924836-A1	Cancer
HLTBF35	Y27582	WO9924836-A1	Cancer
HEPAB80	Y27583	WO9924836-A1	Reproductive
HFOXBI3	Y27584	WO9924836-A1	Musculoskeletal
HTOAK16	Y27585	WO9924836-A1	Cardiovascular, Connective/Epithelial, Immune/Hematopoietic
HBXDC63	Y27586	WO9924836-A1	Neural/Sensory
HASAU43	Y27587	WO9924836-A1	Immune/Hematopoietic
HAGEA31	Y27588	WO9924836-A1	Cancer
HTXHB33	Y27590	WO9924836-A1	Immune/Hematopoietic
HMWFT65	Y27591	WO9924836-A1	Immune/Hematopoietic
HNGAZ68	Y27592	WO9924836-A1	Cardiovascular, Immune/Hematopoietic
HTWFH07	Y27593	WO9924836-A1	Immune/Hematopoietic
HMQDF12	Y27594	WO9924836-A1	Cancer
HFABH95	Y27595	WO9924836-A1	Digestive,

			Neural/Sensory, Reproductive
HNGDD48	Y27596	WO9924836-A1	Immune/Hematopoietic
HPMBY46	Y27597	WO9924836-A1	Cancer
HRKPA09	Y27598	WO9924836-A1	Cancer
HAGAQ26	Y27599	WO9924836-A1	Cancer
HCWFL55	Y27600	WO9924836-A1	Immune/Hematopoietic
HKAAE44	Y27601	WO9924836-A1	Cancer
HNGEU90	Y27602	WO9924836-A1	Immune/Hematopoietic
HCFCC07	Y27603	WO9924836-A1	Digestive, Immune/Hematopoietic
HLWBI63	Y27604	WO9924836-A1	Cancer
HDUAC77	Y27605	WO9924836-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HFOYV27	Y27606	WO9924836-A1	Cancer
HGBHI35	Y27607	WO9924836-A1	Cancer
HRDEU27	Y27608	WO9924836-A1	Musculoskeletal
HNGJE50	Y27609	WO9924836-A1	Immune/Hematopoietic
HNH DU48	Y27610	WO9924836-A1	Immune/Hematopoietic
HFXJU68	Y27611	WO9924836-A1	Immune/Hematopoietic, Neural/Sensory
HMMAH60	Y27612	WO9924836-A1	Immune/Hematopoietic
HNGFR31	Y27613	WO9924836-A1	Immune/Hematopoietic
HFPDB26	Y27614	WO9924836-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HFWAW86	Y27615	WO9924836-A1	Neural/Sensory
HTEDX90	Y27616	WO9924836-A1	Reproductive
HTXGG45	Y27617	WO9924836-A1	Immune/Hematopoietic
HTXJI95	Y27618	WO9924836-A1	Immune/Hematopoietic, Reproductive
HLYBD32	Y27619	WO9924836-A1	Immune/Hematopoietic
HROAJ03	Y27621	WO9924836-A1	Cancer
HTXAJ12	Y27622	WO9924836-A1	Immune/Hematopoietic
HKAEL80	Y27623	WO9924836-A1	Connective/Epithelial, Immune/Hematopoietic
HNHFL04	Y27624	WO9924836-A1	Immune/Hematopoietic
HPCAM01	Y27625	WO9924836-A1	Cancer
HJACA79	Y27626	WO9924836-A1	Immune/Hematopoietic
HMSFI26	Y27628	WO9924836-A1	Immune/Hematopoietic
HMSJR08	Y27629	WO9924836-A1	Immune/Hematopoietic
HMWIO93	Y27630	WO9924836-A1	Cancer
HNGAK47	Y27631	WO9924836-A1	Immune/Hematopoietic
HNGAL31	Y27632	WO9924836-A1	Immune/Hematopoietic
HNGIZ06	Y27633	WO9924836-A1	Immune/Hematopoietic
HNHBI75	Y27634	WO9924836-A1	Immune/Hematopoietic
HOFNT24	Y27635	WO9924836-A1	Reproductive
HSAXI95	Y27636	WO9924836-A1	Immune/Hematopoietic
HCMTB45	Y27637	WO9924836-A1	Cardiovascular, Immune/Hematopoietic, Mixed Fetal
HE9CP41	Y27638	WO9924836-A1	Immune/Hematopoietic, Mixed Fetal
HHENV10	Y27639	WO9924836-A1	Immune/Hematopoietic
HSKDD72	Y27640	WO9924836-A1	Digestive,

			Musculoskeletal
HAGDO20	Y27641	WO9924836-A1	Cancer
HCFBH15	Y27642	WO9924836-A1	Immune/Hematopoietic
HSYBX48	Y27643	WO9924836-A1	Cancer
HATDQ62	Y27644	WO9924836-A1	Cancer
HMEJE13	Y27645	WO9924836-A1	Cancer
HNAAF65	Y27646	WO9924836-A1	Cancer
HNFHY30	Y27647	WO9924836-A1	Immune/Hematopoietic
HNfir81	Y27648	WO9924836-A1	Cancer
HNTBI57	Y27649	WO9924836-A1	Cancer
HSAYR13	Y27650	WO9924836-A1	Immune/Hematopoietic
HTOHV49	Y27651	WO9924836-A1	Immune/Hematopoietic
HSFAG37	Y27652	WO9924836-A1	Cancer
HTXBU52	Y27653	WO9924836-A1	Cancer
HLHFP18	Y27654	WO9924836-A1	Cancer
HFXBW09	Y27655	WO9924836-A1	Neural/Sensory
HNGIO59	Y27656	WO9924836-A1	Immune/Hematopoietic
HNGJF92	Y27657	WO9924836-A1	Immune/Hematopoietic
HMEED18	Y27658	WO9924836-A1	Cancer
HMIAM45	Y27659	WO9924836-A1	Neural/Sensory
HSVK10	Y27660	WO9924836-A1	Immune/Hematopoietic
HSDHC81	Y27661	WO9924836-A1	Immune/Hematopoietic, Neural/Sensory
HSLCT04	Y27662	WO9924836-A1	Mixed Fetal, Musculoskeletal
HMDAB56	Y27663	WO9924836-A1	Immune/Hematopoietic, Neural/Sensory
HUDBZ89	Y27664	WO9924836-A1	Cancer
HLYCT47	Y27665	WO9924836-A1	Digestive, Immune/Hematopoietic
HOSDJ25	Y27666	WO9924836-A1	Cancer
HADAO89	Y27667	WO9924836-A1	Connective/Epithelial
HMSGB14	Y27668	WO9924836-A1	Cancer
HPMGD01	Y27669	WO9924836-A1	Cancer
HNHFU32	Y27670	WO9924836-A1	Immune/Hematopoietic
HMIAL40	Y27671	WO9924836-A1	Musculoskeletal, Neural/Sensory
HAMFY69	Y27672	WO9924836-A1	Cancer
HBMCT17	Y27673	WO9924836-A1	Immune/Hematopoietic, Neural/Sensory
HEBFI91	Y27674	WO9924836-A1	Neural/Sensory
HHEAH86	Y27675	WO9924836-A1	Cancer
HTPCS72	Y27677	WO9924836-A1	Cancer
HFFAL36	Y27678	WO9924836-A1	Neural/Sensory
HFXBT12	Y27679	WO9924836-A1	Immune/Hematopoietic, Neural/Sensory
HNGJF70	Y27680	WO9924836-A1	Immune/Hematopoietic
HATEE46	Y27681	WO9924836-A1	Cancer
HJMBN89	Y27682	WO9924836-A1	Cancer
HNHEK61	Y27683	WO9924836-A1	Immune/Hematopoietic
HEQAO65	Y27684	WO9924836-A1	Cancer
HFCDV54	Y27685	WO9924836-A1	Cancer
HHEAD14	Y27686	WO9924836-A1	Cancer
HGBHE57	Y27687	WO9924836-A1	Cancer
HGLAF75	Y27688	WO9924836-A1	Digestive, Immune/Hematopoietic,



			Reproductive
HHEMQ28	Y27689	WO9924836-A1	Digestive, Immune/Hematopoietic, Neural/Sensory
HERAR44	Y27691	WO9924836-A1	Connective/Epithelial, Reproductive
HYBAV65	Y28640	WO9940183-A1	Immune/Hematopoietic, Musculoskeletal
HETBA38	Y28643	WO9940183-A1	Digestive, Mixed Fetal, Reproductive
HCE1Q30	Y30701	WO9943693-A1	Immune/Hematopoietic, Neural/Sensory
HAGBP70	Y30702	WO9943693-A1	Cancer
HBCAY27	Y30703	WO9943693-A1	Immune/Hematopoietic, Neural/Sensory
HCACU58	Y30704	WO9943693-A1	Immune/Hematopoietic
HCWLD74	Y30705	WO9943693-A1	Immune/Hematopoietic
HDPFP29	Y30706	WO9943693-A1	Cancer
HDPPH47	Y30707	WO9943693-A1	Cancer
HFEAN33	Y30708	WO9943693-A1	Cancer
HFEAT91	Y30709	WO9943693-A1	Connective/Epithelial, Reproductive
HFPAO71	Y30710	WO9943693-A1	Cancer
HLWAA17	Y30711	WO9943693-A1	Cancer
HLYCQ18	Y30712	WO9943693-A1	Immune/Hematopoietic
HOSFG70	Y30713	WO9943693-A1	Cancer
HSSAJ29	Y30714	WO9943693-A1	Cancer
HUSIF44	Y30715	WO9943693-A1	Cancer
H6EDX46	Y30716	WO9943693-A1	Cancer
HABAG37	Y30717	WO9943693-A1	Cancer
HACBD91	Y30718	WO9943693-A1	Cancer
HADEH21	Y30719	WO9943693-A1	Cancer
HAGHD57	Y30720	WO9943693-A1	Cancer
HAGHR69	Y30721	WO9943693-A1	Cancer
HAHDB16	Y30722	WO9943693-A1	Cardiovascular
HAHDR32	Y30723	WO9943693-A1	Cancer
HAJAW93	Y30724	WO9943693-A1	Cancer
HAJBR69	Y30725	WO9943693-A1	Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HAMGO32	Y30726	WO9943693-A1	Reproductive
HATBR65	Y30727	WO9943693-A1	Cancer
HBJLD29	Y30728	WO9943693-A1	Immune/Hematopoietic
HBJNB13	Y30729	WO9943693-A1	Immune/Hematopoietic
HCE2F54	Y30730	WO9943693-A1	Cancer
HCE3C52	Y30731	WO9943693-A1	Cancer
HCEEA88	Y30732	WO9943693-A1	Cancer
HCEFE96	Y30733	WO9943693-A1	Cancer
HCEIF12	Y30734	WO9943693-A1	Cancer
HCEOR67	Y30735	WO9943693-A1	Neural/Sensory
HCEVB76	Y30736	WO9943693-A1	Cancer
HNTOA17	Y30737	WO9943693-A1	Cancer
HDPOW86	Y30811	WO9940100-A1	Cancer
HSYAG26	Y30812	WO9940100-A1	Cancer
HLHCH40	Y30813	WO9940100-A1	Cancer

HPLBM85	Y30814	WO9940100-A1	Cancer
HLMBO76	Y30815	WO9940100-A1	Excretory, Immune/Hematopoietic, Reproductive
HLQDR48	Y30816	WO9940100-A1	Digestive
HOHBY12	Y30817	WO9940100-A1	Musculoskeletal
HOSEK86	Y30818	WO9940100-A1	Cancer
HAJBZ75	Y30819	WO9940100-A1	Cancer
HAGCH75	Y30820	WO9940100-A1	Neural/Sensory
HE8MH91	Y30821	WO9940100-A1	Cancer
HISCJ55	Y30822	WO9940100-A1	Digestive
HKISB57	Y30823	WO9940100-A1	Cancer
HTEBJ71	Y30824	WO9940100-A1	Cancer
HCWGA40	Y30825	WO9940100-A1	Cancer
HFCEW05	Y30826	WO9940100-A1	Cardiovascular, Neural/Sensory
HCEPF19	Y30827	WO9940100-A1	Cancer
HTACZ01	Y30828	WO9940100-A1	Immune/Hematopoietic
HUDAM89	Y30829	WO9940100-A1	Reproductive
HSAXF60	Y30830	WO9940100-A1	Immune/Hematopoietic
HTOGR42	Y30831	WO9940100-A1	Immune/Hematopoietic
HMVBN46	Y30832	WO9940100-A1	Immune/Hematopoietic, Neural/Sensory
HUVEB53	Y30833	WO9940100-A1	Cancer
HSVBU91	Y30834	WO9940100-A1	Cancer
HTXFL30	Y30835	WO9940100-A1	Cancer
HAGAM64	Y30836	WO9940100-A1	Neural/Sensory
HE2PH36	Y30837	WO9940100-A1	Digestive, Immune/Hematopoietic, Mixed Fetal
HGBDY06	Y30838	WO9940100-A1	Cancer
HWBAO62	Y30839	WO9940100-A1	Connective/Epithelial, Immune/Hematopoietic
HBAFJ33	Y30840	WO9940100-A1	Cancer
HFJDJ75	Y30841	WO9940100-A1	Neural/Sensory
HFPCY04	Y30842	WO9940100-A1	Neural/Sensory
HSNBG78	Y30843	WO9940100-A1	Connective/Epithelial, Digestive, Immune/Hematopoietic
HBQAB27	Y30844	WO9940100-A1	Endocrine, Neural/Sensory
HTOJY21	Y30845	WO9940100-A1	Cancer
HHTMM30	Y30846	WO9940100-A1	Cancer
HLTAF58	Y30847	WO9940100-A1	Digestive, Immune/Hematopoietic
HELFG13	Y30848	WO9940100-A1	Cancer
HHFDM48	Y30849	WO9940100-A1	Cardiovascular, Neural/Sensory, Reproductive
HKABI84	Y30850	WO9940100-A1	Cancer
HMVAX72	Y30851	WO9940100-A1	Cancer
HODDN60	Y30852	WO9940100-A1	Cancer
HPMEI44	Y30853	WO9940100-A1	Cancer
HNGJP69	Y30854	WO9940100-A1	Immune/Hematopoietic
HPWBA10	Y30855	WO9940100-A1	Immune/Hematopoietic, Reproductive

HLHCH40	Y30856	WO9940100-A1	Cancer
HTACZ01	Y30857	WO9940100-A1	Immune/Hematopoietic
HTOGR42	Y30858	WO9940100-A1	Immune/Hematopoietic
HTAEK53	Y31811	WO9947538-A1	Cancer
HFCCQ50	Y36224	WO9931117-A1	Cancer
HTLAI54	Y36225	WO9931117-A1	Reproductive
HLWBF94	Y36227	WO9931117-A1	Endocrine, Neural/Sensory, Reproductive
HFKFF78	Y36228	WO9931117-A1	Excretory
HSYBG37	Y36229	WO9931117-A1	Cancer
HTHCA77	Y36230	WO9931117-A1	Immune/Hematopoietic
HNHEZ51	Y36231	WO9931117-A1	Immune/Hematopoietic
HFIAX46	Y36232	WO9931117-A1	Cardiovascular, Musculoskeletal
HFOXO72	Y36233	WO9931117-A1	Cancer
HODDW40	Y36234	WO9931117-A1	Cardiovascular, Immune/Hematopoietic, Reproductive
HSAWG42	Y36235	WO9931117-A1	Immune/Hematopoietic
HBMSK09	Y36236	WO9931117-A1	Digestive, Immune/Hematopoietic, Musculoskeletal
HDDPAU16	Y36237	WO9931117-A1	Cancer
HFEBE12	Y36238	WO9931117-A1	Cancer
HFLNB64	Y36239	WO9931117-A1	Cancer
HSAWZ41	Y36240	WO9931117-A1	Immune/Hematopoietic
HNFJF07	Y36241	WO9931117-A1	Immune/Hematopoietic, Neural/Sensory
HNGJO57	Y36242	WO9931117-A1	Immune/Hematopoietic
HE7TM22	Y36243	WO9931117-A1	Mixed Fetal
HFRBR70	Y36244	WO9931117-A1	Cancer
HTHBK35	Y36245	WO9931117-A1	Immune/Hematopoietic
HWABA81	Y36246	WO9931117-A1	Immune/Hematopoietic
HKGAA73	Y36247	WO9931117-A1	Cancer
HKIYP40	Y36248	WO9931117-A1	Cancer
HKMMW74	Y36249	WO9931117-A1	Excretory
HLFBI27	Y36250	WO9931117-A1	Respiratory
HLQCW84	Y36251	WO9931117-A1	Digestive
HBNAV22	Y36252	WO9931117-A1	Digestive, Reproductive
HTEAM34	Y36253	WO9931117-A1	Reproductive
HTHDK34	Y36254	WO9931117-A1	Digestive, Immune/Hematopoietic
H6BSG32	Y36255	WO9931117-A1	Cardiovascular, Immune/Hematopoietic, Musculoskeletal
HAECA01	Y36256	WO9931117-A1	Cancer
HDTEL03	Y36257	WO9931117-A1	Cancer
HFXDT43	Y36258	WO9931117-A1	Neural/Sensory
HNGHQ09	Y36259	WO9931117-A1	Immune/Hematopoietic
HHGDF16	Y36260	WO9931117-A1	Cancer
HJBCG12	Y36261	WO9931117-A1	Cancer
HOGAW62	Y36262	WO9931117-A1	Immune/Hematopoietic, Reproductive
HSWBJ74	Y36263	WO9931117-A1	Cancer

HGBHR26	Y36264	WO9931117-A1	Digestive
HKDBF34	Y36265	WO9931117-A1	Cancer
H6EAB28	Y36266	WO9931117-A1	Cancer
HLWAO22	Y36267	WO9931117-A1	Cancer
HAGFH53	Y36268	WO9931117-A1	Cancer
HHENQ22	Y36269	WO9931117-A1	Immune/Hematopoietic
HKMLK53	Y36270	WO9931117-A1	Excretory, Mixed Fetal
HSKGQ58	Y36271	WO9931117-A1	Cancer
HADXB45	Y36272	WO9931117-A1	Cancer
HAIBZ39	Y36273	WO9931117-A1	Cancer
HBXFP23	Y36274	WO9931117-A1	Cancer
HEQBF32	Y36275	WO9931117-A1	Cancer
HETHE81	Y36276	WO9931117-A1	Cancer
HFPAC12	Y36277	WO9931117-A1	Cancer
H6EFA77	Y36278	WO9931117-A1	Cancer
HFXHD88	Y36279	WO9931117-A1	Neural/Sensory
HFOXV65	Y36280	WO9931117-A1	Immune/Hematopoietic, Musculoskeletal, Reproductive
HKADX21	Y36281	WO9931117-A1	Cancer
HPZAB47	Y36282	WO9931117-A1	Cancer
HAGFE79	Y36283	WO9931117-A1	Cancer
HCE1X60	Y36284	WO9931117-A1	Neural/Sensory
HFXKD36	Y36285	WO9931117-A1	Digestive, Musculoskeletal, Neural/Sensory
HBMCU71	Y36286	WO9931117-A1	Immune/Hematopoietic
HTEIV80	Y36287	WO9931117-A1	Reproductive
HFIAP16	Y36288	WO9931117-A1	Musculoskeletal
HODAV86	Y36289	WO9931117-A1	Reproductive
HTEDF80	Y36290	WO9931117-A1	Reproductive
HTODJ69	Y36291	WO9931117-A1	Immune/Hematopoietic
HE6GR02	Y36292	WO9931117-A1	Immune/Hematopoietic, Mixed Fetal
HAPNY86	Y36293	WO9931117-A1	Cancer
HTLDR33	Y36294	WO9931117-A1	Immune/Hematopoietic, Reproductive
HACBI61	Y36295	WO9931117-A1	Cancer
HMEIK34	Y36296	WO9931117-A1	Cancer
HKAAK02	Y36297	WO9931117-A1	Cancer
HEPAA46	Y36298	WO9931117-A1	Reproductive
HFPCX09	Y36299	WO9931117-A1	Mixed Fetal, Neural/Sensory
HLWAA88	Y36300	WO9931117-A1	Cancer
HOHBV89	Y36301	WO9931117-A1	Musculoskeletal, Reproductive
HCEFL57	Y36302	WO9931117-A1	Cancer
HMEKU83	Y36303	WO9931117-A1	Cardiovascular, Immune/Hematopoietic, Reproductive
HOSBY40	Y36304	WO9931117-A1	Digestive, Immune/Hematopoietic, Musculoskeletal
HKFBH93	Y36305	WO9931117-A1	Digestive, Reproductive

HMTAD67	Y36306	WO9931117-A1	Cancer
HTEBP77	Y36307	WO9931117-A1	Immune/Hematopoietic, Reproductive
HE9CO69	Y36308	WO9931117-A1	Cancer
HCACV51	Y36309	WO9931117-A1	Cancer
HHPBI45	Y36310	WO9931117-A1	Cardiovascular, Neural/Sensory
HLQDH79	Y36311	WO9931117-A1	Cancer
HNGFJ67	Y36312	WO9931117-A1	Immune/Hematopoietic
HEIAC52	Y36313	WO9931117-A1	Cancer
HFXKL58	Y36314	WO9931117-A1	Cancer
HMVAM60	Y36315	WO9931117-A1	Cancer
HMVBR22	Y36316	WO9931117-A1	Cancer
HPJCW04	Y36317	WO9931117-A1	Reproductive
HSIDJ81	Y36318	WO9931117-A1	Digestive
HSLFU05	Y36319	WO9931117-A1	Cancer
HEQAK71	Y36320	WO9931117-A1	Cancer
HOSEQ49	Y36321	WO9931117-A1	Cancer
HRAAM50	Y36322	WO9931117-A1	Excretory, Immune/Hematopoietic, Mixed Fetal
HSDFW45	Y36323	WO9931117-A1	Neural/Sensory
HSLCQ82	Y36324	WO9931117-A1	Cancer
HSSFT08	Y36325	WO9931117-A1	Musculoskeletal
HTOIW31	Y36326	WO9931117-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HTXKQ85	Y36327	WO9931117-A1	Immune/Hematopoietic, Musculoskeletal, Reproductive
HUFBK08	Y36328	WO9931117-A1	Digestive, Musculoskeletal
HBJEE48	Y36330	WO9931117-A1	Cancer
HBXGH74	Y36331	WO9931117-A1	Neural/Sensory
HISBM03	Y36332	WO9931117-A1	Cancer
HETCH46	Y36333	WO9931117-A1	Cancer
HFPCX09	Y36335	WO9931117-A1	Mixed Fetal, Neural/Sensory
HLWAA88	Y36336	WO9931117-A1	Cancer
HCEFL57	Y36337	WO9931117-A1	Cancer
HETHE81	Y36650	WO9931117-A1	Cancer
HTGAU75	Y38386	WO9935158-A1	Immune/Hematopoietic
HTTDP47	Y38387	WO9935158-A1	Cancer
HTXJQ11	Y38388	WO9935158-A1	Cancer
HADCO45	Y38389	WO9935158-A1	Cancer
HMIAL37	Y38390	WO9935158-A1	Cancer
HNGDU40	Y38391	WO9935158-A1	Immune/Hematopoietic
HFXBO84	Y38392	WO9935158-A1	Neural/Sensory
HLLAX19	Y38393	WO9935158-A1	Cancer
HPMAG94	Y38394	WO9935158-A1	Cancer
HSVAK93	Y38395	WO9935158-A1	Cancer
HMQBO88	Y38396	WO9935158-A1	Cancer
HMQBU45	Y38397	WO9935158-A1	Immune/Hematopoietic
HMWAJ53	Y38398	WO9935158-A1	Immune/Hematopoietic
HCUGO12	Y38401	WO9935158-A1	Digestive, Immune/Hematopoietic,

			Mixed Fetal
HPFCX44	Y38402	WO9935158-A1	Cancer
HCUBV79	Y38403	WO9935158-A1	Immune/Hematopoietic, Neural/Sensory
HLQBV04	Y38404	WO9935158-A1	Cancer
HMADW66	Y38405	WO9935158-A1	Cancer
HLDBE54	Y38406	WO9935158-A1	Digestive, Reproductive
HFTAB66	Y38407	WO9935158-A1	Digestive, Neural/Sensory
HEOMQ63	Y38408	WO9935158-A1	Digestive, Immune/Hematopoietic
HDPJM30	Y38409	WO9935158-A1	Immune/Hematopoietic, Neural/Sensory
HCFMG62	Y38410	WO9935158-A1	Cancer
HJMAG88	Y38411	WO9935158-A1	Cancer
HKAAH36	Y38412	WO9935158-A1	Connective/Epithelial, Reproductive
HMADS41	Y38413	WO9935158-A1	Cancer
HMEFT85	Y38414	WO9935158-A1	Cancer
HMSBX80	Y38415	WO9935158-A1	Immune/Hematopoietic, Reproductive
HNGCL23	Y38416	WO9935158-A1	Immune/Hematopoietic
HPIBO15	Y38418	WO9935158-A1	Cancer
HCYBG92	Y38419	WO9935158-A1	Cancer
HMDAQ29	Y38420	WO9935158-A1	Neural/Sensory, Reproductive
HSYBI49	Y38421	WO9935158-A1	Cancer
HDTAB58	Y38422	WO9935158-A1	Cancer
HFTAB66	Y38423	WO9935158-A1	Digestive, Neural/Sensory
HDPBX23	Y38424	WO9935158-A1	Immune/Hematopoietic, Neural/Sensory
HCFMG62	Y38425	WO9935158-A1	Cancer
HKAAH36	Y38426	WO9935158-A1	Connective/Epithelial, Reproductive
HKAAH36	Y38427	WO9935158-A1	Connective/Epithelial, Reproductive
HMADS41	Y38428	WO9935158-A1	Cancer
HNTBI26	Y38429	WO9935158-A1	Cancer
HCYBI36	Y38430	WO9935158-A1	Cancer
HTHBJ48	Y41161	US5981231-A	Digestive, Immune/Hematopoietic
HDQAC88	Y41164	US5981230-A	Cancer
HKGCR51	Y41308	WO9947540-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HPMDK28	Y41309	WO9947540-A1	Cancer
HLDCD04	Y41310	WO9947540-A1	Cancer
HLDON23	Y41311	WO9947540-A1	Cancer
HLDRM43	Y41312	WO9947540-A1	Digestive, Reproductive
HLQAM28	Y41313	WO9947540-A1	Digestive, Reproductive
HLTDE74	Y41314	WO9947540-A1	Cancer
HLTFA64	Y41315	WO9947540-A1	Cancer

HMC FY13	Y41316	WO9947540-A1	Immune/Hematopoietic
HMMBD35	Y41317	WO9947540-A1	Cancer
HMQCY03	Y41318	WO9947540-A1	Digestive, Immune/Hematopoietic
HMSBX84	Y41319	WO9947540-A1	Immune/Hematopoietic
HMSKI86	Y41320	WO9947540-A1	Cancer
HMVBS81	Y41321	WO9947540-A1	Cancer
HMWEB02	Y41322	WO9947540-A1	Cancer
HMZAD77	Y41323	WO9947540-A1	Cancer
HNFIY77	Y41324	WO9947540-A1	Cancer
HNHEK85	Y41325	WO9947540-A1	Immune/Hematopoietic, Mixed Fetal
HNHEU93	Y41326	WO9947540-A1	Immune/Hematopoietic
HODAH74	Y41327	WO9947540-A1	Connective/Epithelial, Reproductive, Respiratory
HODCU34	Y41328	WO9947540-A1	Cancer
HODCZ09	Y41329	WO9947540-A1	Reproductive
HISCF16	Y41330	WO9947540-A1	Cancer
HOGAG15	Y41331	WO9947540-A1	Cancer
HPIBO48	Y41332	WO9947540-A1	Cancer
HPMFP40	Y41333	WO9947540-A1	Reproductive
HPRCU95	Y41334	WO9947540-A1	Musculoskeletal, Reproductive
HPTTG19	Y41335	WO9947540-A1	Endocrine, Immune/Hematopoietic
HRDDV47	Y41337	WO9947540-A1	Cancer
HRDEN56	Y41338	WO9947540-A1	Musculoskeletal
HSFAN12	Y41339	WO9947540-A1	Cardiovascular
HSQCM10	Y41340	WO9947540-A1	Cancer
HSVAT68	Y41341	WO9947540-A1	Excretory, Reproductive
HSXEC75	Y41342	WO9947540-A1	Cancer
HTDAI54	Y41343	WO9947540-A1	Cancer
HTEIT45	Y41344	WO9947540-A1	Reproductive
HTGBE48	Y41345	WO9947540-A1	Immune/Hematopoietic, Reproductive
HTLEP53	Y41346	WO9947540-A1	Neural/Sensory, Reproductive
HTTBI76	Y41347	WO9947540-A1	Cancer
HTWKG71	Y41348	WO9947540-A1	Immune/Hematopoietic
HTXDN32	Y41349	WO9947540-A1	Cancer
HTSGX80	Y41350	WO9947540-A1	Cancer
HTXEY51	Y41351	WO9947540-A1	Endocrine, Immune/Hematopoietic, Mixed Fetal
HTXFH55	Y41352	WO9947540-A1	Cardiovascular, Immune/Hematopoietic
HTXJW17	Y41353	WO9947540-A1	Digestive, Immune/Hematopoietic
HUFCJ30	Y41354	WO9947540-A1	Cancer
HWAAP70	Y41355	WO9947540-A1	Immune/Hematopoietic
HWABW49	Y41356	WO9947540-A1	Immune/Hematopoietic
HWBDP28	Y41357	WO9947540-A1	Cancer
HWDAC39	Y41358	WO9947540-A1	Connective/Epithelial
HWHGQ49	Y41359	WO9947540-A1	Cancer

HJPAD75	Y41360	WO9947540-A1	Cancer
HLDRP33	Y41361	WO9947540-A1	Digestive, Neural/Sensory
HMSIE02	Y41362	WO9947540-A1	Cancer
HNGFE55	Y41363	WO9947540-A1	Immune/Hematopoietic
HRAAJ19	Y41365	WO9947540-A1	Cancer
HSAWV96	Y41366	WO9947540-A1	Immune/Hematopoietic, Neural/Sensory
HSBBT37	Y41367	WO9947540-A1	Cancer
HSDZR57	Y41368	WO9947540-A1	Cancer
HCECQ07	Y41369	WO9947540-A1	Cancer
HWBCP79	Y41370	WO9947540-A1	Immune/Hematopoietic, Reproductive
HYAAL70	Y41371	WO9947540-A1	Cancer
HYAAY86	Y41372	WO9947540-A1	Immune/Hematopoietic
HAPBS03	Y41373	WO9947540-A1	Cancer
HBJLC01	Y41374	WO9947540-A1	Immune/Hematopoietic
HBLKD56	Y41375	WO9947540-A1	Musculoskeletal
HCENK38	Y41376	WO9947540-A1	Cancer
HE6GA29	Y41379	WO9947540-A1	Mixed Fetal
HETHO95	Y41381	WO9947540-A1	Digestive, Reproductive
HFCFJ18	Y41382	WO9947540-A1	Cancer
HFPBM30	Y41383	WO9947540-A1	Neural/Sensory
HFXTT05	Y41384	WO9947540-A1	Cancer
HKB1E57	Y41385	WO9947540-A1	Cancer
HLWAD77	Y41386	WO9947540-A1	Cancer
HLWAY54	Y41387	WO9947540-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HNGBU28	Y41388	WO9947540-A1	Immune/Hematopoietic
HOUHH51	Y41389	WO9947540-A1	Cancer
HRAAB15	Y41390	WO9947540-A1	Digestive, Excretory
HSAVH65	Y41391	WO9947540-A1	Digestive, Immune/Hematopoietic, Reproductive
HSDGN55	Y41392	WO9947540-A1	Cancer
HSXAH81	Y41393	WO9947540-A1	Cancer
HSXBX80	Y41394	WO9947540-A1	Cancer
HTEHV08	Y41395	WO9947540-A1	Cancer
HUFAK67	Y41396	WO9947540-A1	Digestive, Immune/Hematopoietic, Reproductive
HUSXS50	Y41397	WO9947540-A1	Cancer
HAPON17	Y41398	WO9947540-A1	Cancer
HATAC53	Y41399	WO9947540-A1	Cancer
HAMFK58	Y41400	WO9947540-A1	Cancer
HLYCH68	Y41401	WO9947540-A1	Cancer
HCUHK65	Y41402	WO9947540-A1	Cancer
HLDCD04	Y41403	WO9947540-A1	Cancer
HOUHH51	Y41404	WO9947540-A1	Cancer
HSLCQ82	Y41571	WO9947540-A1	Cancer
HCGMD59	Y45257	WO9946289-A1	Cancer
HCNSD76	Y45258	WO9946289-A1	Digestive
HCNSD93	Y45259	WO9946289-A1	Digestive



HCWBE22	Y45260	WO9946289-A1	Immune/Hematopoietic, Neural/Sensory
HFEAN33	Y45261	WO9946289-A1	Cancer
HCWUM50	Y45262	WO9946289-A1	Cancer
HDHIA94	Y45263	WO9946289-A1	Excretory, Neural/Sensory
HDPAE76	Y45264	WO9946289-A1	Cancer
HDPIO54	Y45265	WO9946289-A1	Immune/Hematopoietic, Reproductive
HDPNC61	Y45266	WO9946289-A1	Cancer
HDPND46	Y45267	WO9946289-A1	Immune/Hematopoietic
HDPSU13	Y45268	WO9946289-A1	Immune/Hematopoietic
HDTGC73	Y45269	WO9946289-A1	Cancer
HE2PD49	Y45270	WO9946289-A1	Cancer
HEEAJ02	Y45271	WO9946289-A1	Cancer
HELHD64	Y45272	WO9946289-A1	Cancer
HEPAD91	Y45273	WO9946289-A1	Digestive, Reproductive
HEQBH65	Y45274	WO9946289-A1	Immune/Hematopoietic, Reproductive
HETCO02	Y45275	WO9946289-A1	Cancer
HFAUO78	Y45276	WO9946289-A1	Cancer
HFKEE48	Y45277	WO9946289-A1	Cancer
HFKFG02	Y45278	WO9946289-A1	Excretory, Immune/Hematopoietic, Neural/Sensory
H2CBN14	Y45279	WO9946289-A1	Cancer
HHFFJ48	Y45280	WO9946289-A1	Cardiovascular, Immune/Hematopoietic
HILCF66	Y45281	WO9946289-A1	Cancer
HKABN45	Y45282	WO9946289-A1	Cancer
HKDBK22	Y45284	WO9946289-A1	Excretory
HKGZ06	Y45286	WO9946289-A1	Immune/Hematopoietic
HKGCK61	Y45287	WO9946289-A1	Cancer
HFEAN33	Y45288	WO9946289-A1	Cancer
HDHIA94	Y45289	WO9946289-A1	Excretory, Neural/Sensory
HDPJO39	Y52479	WO9940184-A1	Cancer
HNTCF82	Y58185	US6004780-A	Cardiovascular, Connective/Epithelial, Reproductive
HETAB62	Y59285	WO200004183-A1	Cancer
HSYAE36	Y59286	WO200004183-A1	Cancer
HKAPI15	Y68800	WO200005371-A1	Connective/Epithelial
HUJCT9C	Y72090	WO200068247-A2	Cancer
HMGBM65	Y72091	WO200068247-A2	Cancer
HATEE38	Y72092	WO200068247-A2	Cancer
HCHAK72	Y72093	WO200068247-A2	Cancer
HHFBJ67	Y72094	WO200068247-A2	Cardiovascular, Neural/Sensory
HTTJK5C	Y72095	WO200068247-A2	Cancer
HWLGJ11	Y72096	WO200068247-A2	Digestive
HTLEG15	Y72097	WO200068247-A2	Cancer
HAGAS16	Y72098	WO200068247-A2	Neural/Sensory
HATEE38	Y72108	WO200068247-A2	Cancer
HKABZ65	Y76124	WO9958660-A1	Connective/Epithelial

HNGIC80	Y76125	WO9958660-A1	Immune/Hematopoietic
HDPUG50	Y76126	WO9958660-A1	Cancer
HAEAB66	Y76127	WO9958660-A1	Cancer
HHEPF59	Y76128	WO9958660-A1	Cancer
HE9BK23	Y76129	WO9958660-A1	Digestive, Mixed Fetal
HCYBI36	Y76130	WO9958660-A1	Cancer
HSSDX51	Y76131	WO9958660-A1	Cancer
HSDAJ46	Y76132	WO9958660-A1	Cancer
HRACG45	Y76133	WO9958660-A1	Cancer
HAPPW30	Y76134	WO9958660-A1	Cancer
HE2ES51	Y76135	WO9958660-A1	Cancer
HTXDW56	Y76136	WO9958660-A1	Cancer
HDPKI93	Y76138	WO9958660-A1	Cancer
HDLAC10	Y76139	WO9958660-A1	Cancer
HDPOH06	Y76140	WO9958660-A1	Cancer
HCE4G61	Y76141	WO9958660-A1	Cancer
HCWUI13	Y76142	WO9958660-A1	Immune/Hematopoietic
HDPSP01	Y76143	WO9958660-A1	Cancer
HHPEN62	Y76144	WO9958660-A1	Cancer
HUKBT29	Y76145	WO9958660-A1	Cancer
HARAP48	Y76146	WO9958660-A1	Cancer
HBIMB51	Y76147	WO9958660-A1	Connective/Epithelial, Reproductive
HE8DX88	Y76148	WO9958660-A1	Mixed Fetal
HNGHT03	Y76149	WO9958660-A1	Immune/Hematopoietic
HWABU17	Y76150	WO9958660-A1	Cancer
HCE5F84	Y76151	WO9958660-A1	Cancer
HBXCD55	Y76152	WO9958660-A1	Cancer
HOVCB25	Y76153	WO9958660-A1	Reproductive
HSYAV66	Y76154	WO9958660-A1	Digestive, Immune/Hematopoietic
HFPCT29	Y76155	WO9958660-A1	Neural/Sensory
HAWAT25	Y76156	WO9958660-A1	Cancer
HNHFR04	Y76157	WO9958660-A1	Immune/Hematopoietic
HOSFT61	Y76158	WO9958660-A1	Cancer
HBJIO81	Y76159	WO9958660-A1	Immune/Hematopoietic
HADCL55	Y76160	WO9958660-A1	Cancer
HAGGJ80	Y76161	WO9958660-A1	Cancer
HAIBO81	Y76162	WO9958660-A1	Neural/Sensory
HBBBC37	Y76163	WO9958660-A1	Cancer
HBJMX85	Y76164	WO9958660-A1	Cancer
HCEES66	Y76165	WO9958660-A1	Digestive, Neural/Sensory
HCEMP62	Y76166	WO9958660-A1	Cancer
HE2FB90	Y76167	WO9958660-A1	Cancer
HE9DS56	Y76168	WO9958660-A1	Cancer
HTOHJ89	Y76169	WO9958660-A1	Immune/Hematopoietic
HASCE69	Y76171	WO9958660-A1	Cancer
HHTLH52	Y76172	WO9958660-A1	Neural/Sensory, Reproductive
HOUCT90	Y76174	WO9958660-A1	Connective/Epithelial
HCFLR78	Y76175	WO9958660-A1	Cancer
HTOHT18	Y76176	WO9958660-A1	Cancer
HKPMB11	Y76177	WO9958660-A1	Digestive, Excretory,

			Musculoskeletal
HNHFS38	Y76178	WO9958660-A1	Cancer
HAIBU10	Y76179	WO9958660-A1	Cancer
HAPOK30	Y76180	WO9958660-A1	Cancer
HCWUA22	Y76182	WO9958660-A1	Immune/Hematopoietic
HDSAG91	Y76183	WO9958660-A1	Immune/Hematopoietic
HNEDJ35	Y76184	WO9958660-A1	Immune/Hematopoietic, Reproductive
HTHBH29	Y76185	WO9958660-A1	Immune/Hematopoietic, Mixed Fetal, Reproductive
H7TBA62	Y76186	WO9958660-A1	Cancer
HNGIO50	Y76187	WO9958660-A1	Immune/Hematopoietic
HMIW81	Y76188	WO9958660-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HMMCJ60	Y76189	WO9958660-A1	Immune/Hematopoietic, Musculoskeletal
HDPIO09	Y76190	WO9958660-A1	Cancer
HHFHH34	Y76191	WO9958660-A1	Cardiovascular
HISCL83	Y76192	WO9958660-A1	Digestive
HTOAI70	Y76193	WO9958660-A1	Immune/Hematopoietic
HSER95	Y76194	WO9958660-A1	Digestive, Neural/Sensory
HNECL25	Y76195	WO9958660-A1	Immune/Hematopoietic
HNFGZ45	Y76196	WO9958660-A1	Cardiovascular, Digestive, Immune/Hematopoietic
HHGCU49	Y76197	WO9958660-A1	Cancer
HETDT81	Y76199	WO9958660-A1	Digestive, Immune/Hematopoietic, Reproductive
HHLBA14	Y76200	WO9958660-A1	Cancer
HLTBU43	Y76201	WO9958660-A1	Immune/Hematopoietic
HNTSJ84	Y76202	WO9958660-A1	Cancer
HOHCG16	Y76203	WO9958660-A1	Digestive, Musculoskeletal
HTHCB31	Y76204	WO9958660-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HUKAM16	Y76205	WO9958660-A1	Cancer
HLDOJ66	Y76206	WO9958660-A1	Digestive
HTXKF10	Y76207	WO9958660-A1	Immune/Hematopoietic
HPMAI22	Y76208	WO9958660-A1	Reproductive
HL2AG57	Y76209	WO9958660-A1	Cancer
HUSAM59	Y76210	WO9958660-A1	Cancer
HNGGR26	Y76211	WO9958660-A1	Immune/Hematopoietic
HTLCX30	Y76212	WO9958660-A1	Reproductive
HCEBC87	Y76213	WO9958660-A1	Cancer
HATCB92	Y76214	WO9958660-A1	Endocrine
HLHAL68	Y76216	WO9958660-A1	Respiratory
HEOMR73	Y76217	WO9958660-A1	Immune/Hematopoietic
HETIB83	Y76218	WO9958660-A1	Cancer
HJPDD28	Y76219	WO9958660-A1	Cancer
HBAMB15	Y76220	WO9958660-A1	Cardiovascular, Excretory,

			Reproductive
HBAFQ33	Y76221	WO9958660-A1	Cancer
HTOAI70	Y76222	WO9958660-A1	Immune/Hematopoietic
HJPDD28	Y76223	WO9958660-A1	Cancer
HRACG45	Y76266	WO9958660-A1	Cancer
HBXCD55	Y76303	WO9958660-A1	Cancer
HOSFT61	Y76325	WO9958660-A1	Cancer
HWBBP10	Y86215	WO9966041-A1	Immune/Hematopoietic, Neural/Sensory
HWBDO80	Y86216	WO9966041-A1	Immune/Hematopoietic, Musculoskeletal, Reproductive
HWHGU54	Y86217	WO9966041-A1	Connective/Epithelial
HYACI76	Y86218	WO9966041-A1	Cancer
HBHMA23	Y86219	WO9966041-A1	Cancer
HCE3G20	Y86220	WO9966041-A1	Cancer
HCEJP80	Y86221	WO9966041-A1	Cardiovascular, Neural/Sensory
HCUDD24	Y86222	WO9966041-A1	Digestive, Immune/Hematopoietic, Reproductive
HDPTD15	Y86223	WO9966041-A1	Immune/Hematopoietic
HDPWU34	Y86224	WO9966041-A1	Cancer
HEOOV79	Y86225	WO9966041-A1	Cancer
HFKET93	Y86226	WO9966041-A1	Excretory, Immune/Hematopoietic, Neural/Sensory
HFTDL56	Y86227	WO9966041-A1	Cancer
HFXJX44	Y86228	WO9966041-A1	Cancer
HKACU58	Y86229	WO9966041-A1	Cancer
HKFBC53	Y86230	WO9966041-A1	Cancer
HLTHR66	Y86231	WO9966041-A1	Cancer
HLYBA69	Y86232	WO9966041-A1	Cancer
HNTMX29	Y86233	WO9966041-A1	Cancer
HNTNC20	Y86234	WO9966041-A1	Cancer
HNTNI01	Y86235	WO9966041-A1	Cancer
HPIBW65	Y86236	WO9966041-A1	Cancer
HSMBE69	Y86237	WO9966041-A1	Cancer
HT4FW61	Y86238	WO9966041-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive
HYABK95	Y86239	WO9966041-A1	Cancer
HYACE88	Y86240	WO9966041-A1	Cancer
HOABR60	Y86241	WO9966041-A1	Cancer
HAPOM45	Y86243	WO9966041-A1	Cardiovascular, Digestive
HCEJQ69	Y86244	WO9966041-A1	Cancer
HAGFI62	Y86245	WO9966041-A1	Cancer
HAGGS43	Y86246	WO9966041-A1	Neural/Sensory
HBJHP03	Y86247	WO9966041-A1	Immune/Hematopoietic, Reproductive
HCHPF68	Y86248	WO9966041-A1	Reproductive
HDPJF37	Y86249	WO9966041-A1	Cancer
HSDEZ20	Y86250	WO9966041-A1	Neural/Sensory
HTEKU58	Y86251	WO9966041-A1	Cancer
HLTBL58	Y86252	WO9966041-A1	Immune/Hematopoietic,

			Musculoskeletal, Neural/Sensory
HPWDJ42	Y86253	WO9966041-A1	Digestive, Reproductive
HRACD15	Y86254	WO9966041-A1	Cancer
HSIAC80	Y86255	WO9966041-A1	Cancer
HAGFD18	Y86256	WO9966041-A1	Cancer
HAJAP76	Y86257	WO9966041-A1	Cancer
HDTGC86	Y86258	WO9966041-A1	Digestive, Immune/Hematopoietic, Reproductive
HAGDI35	Y86259	WO9966041-A1	Cancer
HELHN47	Y86260	WO9966041-A1	Cancer
HPRBC80	Y86261	WO9966041-A1	Cancer
HAQAR23	Y86262	WO9966041-A1	Cancer
HAIFL18	Y86263	WO9966041-A1	Digestive, Immune/Hematopoietic
HJPAY76	Y86264	WO9966041-A1	Cancer
HUSXE77	Y86265	WO9966041-A1	Cancer
HUFEF62	Y86266	WO9966041-A1	Digestive
HTWJK32	Y86267	WO9966041-A1	Cancer
HTWDF76	Y86268	WO9966041-A1	Immune/Hematopoietic
HTPBN68	Y86269	WO9966041-A1	Digestive
HTOIY21	Y86270	WO9966041-A1	Immune/Hematopoietic
HTLDD53	Y86271	WO9966041-A1	Connective/Epithelial, Digestive, Reproductive
HTLFG05	Y86272	WO9966041-A1	Cancer
HDPXR23	Y86273	WO9966041-A1	Digestive, Immune/Hematopoietic
HSIAC45	Y86274	WO9966041-A1	Digestive, Immune/Hematopoietic
HSRGW16	Y86275	WO9966041-A1	Cancer
HSSJC35	Y86276	WO9966041-A1	Cancer
HTEAX23	Y86277	WO9966041-A1	Reproductive
HTGCH22	Y86278	WO9966041-A1	Immune/Hematopoietic, Mixed Fetal, Reproductive
HTJMA95	Y86279	WO9966041-A1	Cancer
HHEAA08	Y86280	WO9966041-A1	Immune/Hematopoietic
HBQAA49	Y86281	WO9966041-A1	Neural/Sensory
HDPBI32	Y86282	WO9966041-A1	Excretory, Immune/Hematopoietic, Neural/Sensory
HBIBF16	Y86283	WO9966041-A1	Neural/Sensory
HBCAY05	Y86284	WO9966041-A1	Cancer
HCUCK44	Y86285	WO9966041-A1	Cancer
HCE2W56	Y86286	WO9966041-A1	Cancer
HCWAG01	Y86287	WO9966041-A1	Immune/Hematopoietic
HDRMI82	Y86289	WO9966041-A1	Cancer
HEPCU48	Y86290	WO9966041-A1	Cancer
HDPRK33	Y86291	WO9966041-A1	Immune/Hematopoietic, Mixed Fetal
HKGAX42	Y86292	WO9966041-A1	Digestive, Immune/Hematopoietic, Reproductive

HLMAZ95	Y86293	WO9966041-A1	Cancer
HLMFC07	Y86294	WO9966041-A1	Digestive, Immune/Hematopoietic
HL2AG87	Y86295	WO9966041-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HKGCO27	Y86296	WO9966041-A1	Cancer
HLDCE79	Y86297	WO9966041-A1	Digestive
HERAD40	Y86298	WO9966041-A1	Connective/Epithelial
HFOXB55	Y86299	WO9966041-A1	Cancer
HFVGZ42	Y86300	WO9966041-A1	Cancer
HNHAF39	Y86301	WO9966041-A1	Immune/Hematopoietic
HNTSW57	Y86302	WO9966041-A1	Cancer
HOGCK20	Y86303	WO9966041-A1	Cancer
HLYES38	Y86305	WO9966041-A1	Immune/Hematopoietic, Reproductive
HMECK83	Y86306	WO9966041-A1	Cardiovascular
HMQAG66	Y86308	WO9966041-A1	Immune/Hematopoietic
HWBBP10	Y86309	WO9966041-A1	Immune/Hematopoietic, Neural/Sensory
HAPAK52	Y86310	WO9966041-A1	Cancer
HDPWU34	Y86311	WO9966041-A1	Cancer
HKACU58	Y86312	WO9966041-A1	Cancer
HLDBQ19	Y86314	WO9966041-A1	Cancer
HNTMX29	Y86315	WO9966041-A1	Cancer
HOABR60	Y86316	WO9966041-A1	Cancer
HPWDJ42	Y86317	WO9966041-A1	Digestive, Reproductive
HPWDJ42	Y86318	WO9966041-A1	Digestive, Reproductive
HRACD15	Y86319	WO9966041-A1	Cancer
HPRBC80	Y86320	WO9966041-A1	Cancer
HUFEF62	Y86321	WO9966041-A1	Digestive
HTLFG05	Y86322	WO9966041-A1	Cancer
HDPXR23	Y86323	WO9966041-A1	Digestive, Immune/Hematopoietic
HSRGW16	Y86324	WO9966041-A1	Cancer
HDPBI32	Y86327	WO9966041-A1	Excretory, Immune/Hematopoietic, Neural/Sensory
HDRMI82	Y86328	WO9966041-A1	Cancer
HKGCO27	Y86330	WO9966041-A1	Cancer
HNTSW57	Y86332	WO9966041-A1	Cancer
HOGCK20	Y86333	WO9966041-A1	Cancer
HNTMX29	Y86388	WO9966041-A1	Cancer
HPRBC80	Y86463	WO9966041-A1	Cancer
HTLFG05	Y86488	WO9966041-A1	Cancer
HDPXR23	Y86489	WO9966041-A1	Digestive, Immune/Hematopoietic
HSRGW16	Y86496	WO9966041-A1	Cancer
HDRMI82	Y86532	WO9966041-A1	Cancer
HNTSW57	Y86571	WO9966041-A1	Cancer
HISCN02	Y87064	WO200004140-A1	Digestive
HHGDM70	Y87065	WO200004140-A1	Immune/Hematopoietic
HHPGO40	Y87066	WO200004140-A1	Cancer
HAMGG68	Y87067	WO200004140-A1	Cancer

HAPOM49	Y87068	WO200004140-A1	Cancer
HBGBA69	Y87069	WO200004140-A1	Cancer
HBJFJ26	Y87070	WO200004140-A1	Cancer
HCEDH38	Y87071	WO200004140-A1	Mixed Fetal, Neural/Sensory
HDPOJ08	Y87072	WO200004140-A1	Cancer
HDPRX82	Y87073	WO200004140-A1	Cancer
HELGK31	Y87074	WO200004140-A1	Cancer
HFPCX64	Y87075	WO200004140-A1	Mixed Fetal, Neural/Sensory
HFXDO60	Y87076	WO200004140-A1	Neural/Sensory
HAUAI83	Y87077	WO200004140-A1	Reproductive
HKGAH42	Y87078	WO200004140-A1	Neural/Sensory
HMIAP86	Y87079	WO200004140-A1	Cancer
HMUAP70	Y87080	WO200004140-A1	Cancer
HRACJ35	Y87081	WO200004140-A1	Cancer
HTWDE26	Y87082	WO200004140-A1	Cancer
HBGBB44	Y87083	WO200004140-A1	Cancer
HBAFA02	Y87084	WO200004140-A1	Cancer
H2CBT75	Y87085	WO200004140-A1	Cancer
HAGDQ42	Y87086	WO200004140-A1	Cancer
HBMCI42	Y87087	WO200004140-A1	Immune/Hematopoietic, Reproductive
HLCDA16	Y87089	WO200004140-A1	Cancer
HELHL48	Y87090	WO200004140-A1	Cancer
HISAQ04	Y87091	WO200004140-A1	Digestive, Neural/Sensory, Reproductive
HJACB89	Y87092	WO200004140-A1	Cancer
HTECC05	Y87093	WO200004140-A1	Cancer
HBJLF01	Y87094	WO200004140-A1	Cancer
HBXGP60	Y87095	WO200004140-A1	Cancer
HCE5B20	Y87096	WO200004140-A1	Mixed Fetal, Neural/Sensory
HCMSQ56	Y87097	WO200004140-A1	Cancer
HCNAH57	Y87098	WO200004140-A1	Digestive
HCUEP91	Y87099	WO200004140-A1	Immune/Hematopoietic
HDPCJ91	Y87100	WO200004140-A1	Cancer
HDPGK25	Y87101	WO200004140-A1	Cancer
HE2DY70	Y87102	WO200004140-A1	Immune/Hematopoietic, Mixed Fetal, Musculoskeletal
HE2NV57	Y87103	WO200004140-A1	Cancer
HETBR16	Y87104	WO200004140-A1	Digestive, Immune/Hematopoietic, Reproductive
HFXDG13	Y87105	WO200004140-A1	Cancer
HFXKY27	Y87106	WO200004140-A1	Neural/Sensory
HHPEC09	Y87107	WO200004140-A1	Cancer
HISAD54	Y87108	WO200004140-A1	Cancer
HJBCY35	Y87109	WO200004140-A1	Cancer
HKAEA19	Y87110	WO200004140-A1	Cancer
HKGDL36	Y87111	WO200004140-A1	Cancer
HLDBS43	Y87112	WO200004140-A1	Cancer
HLWAD92	Y87113	WO200004140-A1	Cancer
HLYBI15	Y87114	WO200004140-A1	Immune/Hematopoietic

HMEJE05	Y87115	WO200004140-A1	Cancer
HNGIX55	Y87116	WO200004140-A1	Immune/Hematopoietic
HNHEX30	Y87117	WO200004140-A1	Immune/Hematopoietic
HPJBI33	Y87118	WO200004140-A1	Reproductive
HRABA80	Y87119	WO200004140-A1	Excretory
HRACD80	Y87120	WO200004140-A1	Excretory, Reproductive
HSLCX03	Y87121	WO200004140-A1	Cancer
HT5GJ57	Y87122	WO200004140-A1	Cancer
HTACS42	Y87123	WO200004140-A1	Cancer
HTEKE40	Y87124	WO200004140-A1	Cancer
HTOBX69	Y87125	WO200004140-A1	Cancer
HUVEO77	Y87126	WO200004140-A1	Reproductive
H2CBG48	Y87127	WO200004140-A1	Cancer
H2CBU83	Y87128	WO200004140-A1	Cancer
HAPNY94	Y87129	WO200004140-A1	Cancer
HBHJH58	Y87130	WO200004140-A1	Immune/Hematopoietic, Reproductive
HCE2B33	Y87131	WO200004140-A1	Cancer
HDPBQ02	Y87132	WO200004140-A1	Immune/Hematopoietic
HFIYI70	Y87133	WO200004140-A1	Cancer
HDPOZ56	Y87134	WO200004140-A1	Cancer
HAPOM49	Y87136	WO200004140-A1	Cancer
HBJFJ26	Y87137	WO200004140-A1	Cancer
HCNUA40	Y87138	WO200004140-A1	Cancer
HCEBW71	Y87139	WO200004140-A1	Mixed Fetal, Neural/Sensory
HCEBW71	Y87140	WO200004140-A1	Mixed Fetal, Neural/Sensory
HAUAI83	Y87141	WO200004140-A1	Reproductive
HFLQB16	Y87143	WO200004140-A1	Cancer
HAGFY16	Y87144	WO200004140-A1	Cancer
HFLQB16	Y87146	WO200004140-A1	Cancer
HAGFY16	Y87147	WO200004140-A1	Cancer
HMHBN40	Y87149	WO200004140-A1	Cancer
HDPBQ71	Y87150	WO200004140-A1	Cancer
HSKCT36	Y87151	WO200004140-A1	Cancer
HRACD80	Y87152	WO200004140-A1	Excretory, Reproductive
HSLCX03	Y87153	WO200004140-A1	Cancer
H2CBU83	Y87154	WO200004140-A1	Cancer
HFLQB16	Y87180	WO200004140-A1	Cancer
HAGFY16	Y87181	WO200004140-A1	Cancer
HFLQB16	Y87183	WO200004140-A1	Cancer
HAGFY16	Y87184	WO200004140-A1	Cancer
HMHBN40	Y87187	WO200004140-A1	Cancer
HDPBQ71	Y87188	WO200004140-A1	Cancer
HSKCT36	Y87192	WO200004140-A1	Cancer
HRACD80	Y87205	WO200004140-A1	Excretory, Reproductive
HSLCX03	Y87208	WO200004140-A1	Cancer
H2CBU83	Y87215	WO200004140-A1	Cancer
HISCH47	Y87784	US6054289-A	Cancer
HADCD24	Y87789	US6054289-A	Cancer
HDTEA84	Y90357	WO200052028-A1	Cancer
HKGCN17	Y91346	WO200011014-A1	Immune/Hematopoietic,



			Neural/Sensory, Reproductive
HETAD68	Y91347	WO200011014-A1	Cancer
HPIAT78	Y91348	WO200011014-A1	Cancer
HHFHG52	Y91349	WO200011014-A1	Cancer
HDTAB58	Y91350	WO200011014-A1	Cancer
HEOMQ62	Y91351	WO200011014-A1	Cancer
HWLJQ88	Y91352	WO200011014-A1	Digestive
HMICP03	Y91353	WO200011014-A1	Cancer
HAJAB01	Y91354	WO200011014-A1	Cancer
HE2AT09	Y91355	WO200011014-A1	Cancer
HSDJA15	Y91356	WO200011014-A1	Cancer
HAMGW29	Y91357	WO200011014-A1	Cancer
HAPSR85	Y91358	WO200011014-A1	Digestive, Endocrine
HTOHD42	Y91359	WO200011014-A1	Immune/Hematopoietic
HWLIH65	Y91360	WO200011014-A1	Cancer
HTOJA73	Y91361	WO200011014-A1	Immune/Hematopoietic
HPMGJ45	Y91362	WO200011014-A1	Cancer
HFVIC62	Y91363	WO200011014-A1	Digestive, Immune/Hematopoietic, Reproductive
HHENW77	Y91364	WO200011014-A1	Cancer
HMSIV91	Y91365	WO200011014-A1	Cancer
HMSKC04	Y91366	WO200011014-A1	Immune/Hematopoietic
HSAZG33	Y91367	WO200011014-A1	Immune/Hematopoietic
HTEBC92	Y91368	WO200011014-A1	Cancer
HTXEL29	Y91369	WO200011014-A1	Immune/Hematopoietic
HDPAW44	Y91370	WO200011014-A1	Cancer
HMACS20	Y91371	WO200011014-A1	Cancer
HAJAY88	Y91372	WO200011014-A1	Immune/Hematopoietic
HBOEG69	Y91373	WO200011014-A1	Cancer
HWLEQ37	Y91374	WO200011014-A1	Cancer
HE9CS37	Y91375	WO200011014-A1	Cancer
HNGEI34	Y91376	WO200011014-A1	Immune/Hematopoietic
HTOAT76	Y91377	WO200011014-A1	Excretory, Immune/Hematopoietic
HDPVH60	Y91378	WO200011014-A1	Cancer
HLYCR65	Y91379	WO200011014-A1	Cancer
HARAY91	Y91380	WO200011014-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HCHNT03	Y91381	WO200011014-A1	Digestive, Reproductive
HCUBW95	Y91382	WO200011014-A1	Immune/Hematopoietic, Neural/Sensory
HDPLV95	Y91383	WO200011014-A1	Immune/Hematopoietic, Reproductive
HEMGB12	Y91384	WO200011014-A1	Cancer
HHENP27	Y91385	WO200011014-A1	Cancer
HSPBF70	Y91386	WO200011014-A1	Cancer
HTXKB57	Y91387	WO200011014-A1	Cancer
HUKAA55	Y91388	WO200011014-A1	Digestive, Immune/Hematopoietic, Reproductive
HFXGT58	Y91389	WO200011014-A1	Neural/Sensory

HUSFF19	Y91391	WO200011014-A1	Cancer
HUVDJ43	Y91393	WO200011014-A1	Cardiovascular, Reproductive
HTLCU49	Y91394	WO200011014-A1	Cancer
HDTAB58	Y91395	WO200011014-A1	Cancer
HWLJQ88	Y91396	WO200011014-A1	Digestive
HUVDJ43	Y91399	WO200011014-A1	Cardiovascular, Reproductive
HUVDJ43	Y91400	WO200011014-A1	Cardiovascular, Reproductive
HTLCU49	Y91401	WO200011014-A1	Cancer
HUVDJ43	Y91446	WO200011014-A1	Cardiovascular, Reproductive
HUVDJ43	Y91448	WO200011014-A1	Cardiovascular, Reproductive
HFKIB49	Y91449	WO200011014-A1	Cancer
HDPTK41	Y91451	WO200006698-A1	Cancer
HFXGT26	Y91452	WO200006698-A1	Cancer
HLTGX30	Y91453	WO200006698-A1	Immune/Hematopoietic
HLTHG37	Y91454	WO200006698-A1	Cancer
HNTMZ90	Y91455	WO200006698-A1	Digestive, Reproductive
HPIBX03	Y91456	WO200006698-A1	Cancer
H6EDY30	Y91457	WO200006698-A1	Cancer
HAMGR28	Y91458	WO200006698-A1	Cancer
HAPNZ94	Y91459	WO200006698-A1	Cancer
HATCP77	Y91460	WO200006698-A1	Cancer
HDABR72	Y91461	WO200006698-A1	Cancer
HDPKB18	Y91462	WO200006698-A1	Immune/Hematopoietic
HEQCC55	Y91463	WO200006698-A1	Cancer
HETDE26	Y91464	WO200006698-A1	Cancer
HOEDH84	Y91465	WO200006698-A1	Cancer
HPIBT55	Y91466	WO200006698-A1	Cancer
HSLCS05	Y91467	WO200006698-A1	Cancer
HDPDD03	Y91468	WO200006698-A1	Cancer
HDTDQ23	Y91470	WO200006698-A1	Cancer
HE2PY40	Y91471	WO200006698-A1	Mixed Fetal
HEONM66	Y91472	WO200006698-A1	Immune/Hematopoietic
HKAEG43	Y91473	WO200006698-A1	Cancer
HLHDP65	Y91474	WO200006698-A1	Cancer
HLMD003	Y91475	WO200006698-A1	Cancer
HMAGK93	Y91476	WO200006698-A1	Cancer
HMEAL02	Y91477	WO200006698-A1	Cardiovascular
HMKCH52	Y91478	WO200006698-A1	Neural/Sensory
HCEFB69	Y91479	WO200006698-A1	Cancer
HKADM92	Y91480	WO200006698-A1	Cancer
HSPMG77	Y91481	WO200006698-A1	Digestive
HSQAC69	Y91482	WO200006698-A1	Cancer
HSTBJ86	Y91483	WO200006698-A1	Connective/Epithelial
HUVDJ43	Y91485	WO200006698-A1	Cardiovascular, Reproductive
HADCP14	Y91486	WO200006698-A1	Connective/Epithelial
HBXCF95	Y91487	WO200006698-A1	Cancer
HEQBU15	Y91488	WO200006698-A1	Cancer
HL1BD22	Y91489	WO200006698-A1	Cancer
HOEEU24	Y91490	WO200006698-A1	Cancer

HTTBR96	Y91491	WO200006698-A1	Reproductive
HWHQS55	Y91492	WO200006698-A1	Cancer
HCEEK50	Y91493	WO200006698-A1	Cancer
HCWBU94	Y91494	WO200006698-A1	Immune/Hematopoietic
HE2NR62	Y91495	WO200006698-A1	Cancer
HHSQH19	Y91496	WO200006698-A1	Neural/Sensory
HDPGT01	Y91497	WO200006698-A1	Cancer
HOHCA35	Y91499	WO200006698-A1	Cancer
HPMGP24	Y91500	WO200006698-A1	Mixed Fetal, Reproductive
HSDIE16	Y91501	WO200006698-A1	Neural/Sensory
HSOBK48	Y91502	WO200006698-A1	Digestive
HTADH39	Y91503	WO200006698-A1	Cancer
HUSGT36	Y91504	WO200006698-A1	Cardiovascular
HVAAE95	Y91505	WO200006698-A1	Digestive
HHEAH25	Y91506	WO200006698-A1	Cancer
HBJY92	Y91507	WO200006698-A1	Cancer
HCLCW50	Y91508	WO200006698-A1	Respiratory
HDRMF68	Y91509	WO200006698-A1	Digestive, Respiratory
HOUGG12	Y91510	WO200006698-A1	Cancer
HEEAQ11	Y91511	WO200006698-A1	Reproductive
HEEAZ65	Y91512	WO200006698-A1	Musculoskeletal, Reproductive
HEGAN94	Y91513	WO200006698-A1	Reproductive
HFXBL33	Y91514	WO200006698-A1	Cancer
HLIBD68	Y91515	WO200006698-A1	Cancer
HLTCO33	Y91516	WO200006698-A1	Immune/Hematopoietic, Neural/Sensory, Reproductive
HLYAC95	Y91517	WO200006698-A1	Immune/Hematopoietic
HNHKS18	Y91519	WO200006698-A1	Immune/Hematopoietic
HSLJW78	Y91520	WO200006698-A1	Musculoskeletal
HHFHD01	Y91521	WO200006698-A1	Cardiovascular, Musculoskeletal, Neural/Sensory
HLWAE11	Y91522	WO200006698-A1	Cancer
HCYBN55	Y91523	WO200006698-A1	Cancer
HEONX38	Y91524	WO200006698-A1	Cancer
HLDQU79	Y91525	WO200006698-A1	Cancer
HSYBK21	Y91526	WO200006698-A1	Cancer
HTHDS25	Y91528	WO200006698-A1	Endocrine, Immune/Hematopoietic
HFIHO70	Y91529	WO200006698-A1	Cancer
HPMEI86	Y91530	WO200006698-A1	Cancer
HSOBV29	Y91531	WO200006698-A1	Cancer
HWABY10	Y91532	WO200006698-A1	Cancer
HACCI17	Y91533	WO200006698-A1	Cancer
HAPQT22	Y91534	WO200006698-A1	Immune/Hematopoietic
HDPBO81	Y91535	WO200006698-A1	Digestive, Immune/Hematopoietic, Reproductive
HDPGI49	Y91536	WO200006698-A1	Cancer
HDTBV77	Y91537	WO200006698-A1	Cancer
HFIUE82	Y91538	WO200006698-A1	Cancer
HHEND31	Y91539	WO200006698-A1	Cancer

HKMND01	Y91540	WO200006698-A1	Excretory
HLDBI84	Y91541	WO200006698-A1	Cancer
HLTEK17	Y91542	WO200006698-A1	Cancer
HEBEJ18	Y91543	WO200006698-A1	Cancer
HMEAI48	Y91544	WO200006698-A1	Cardiovascular
HNHGN91	Y91545	WO200006698-A1	Digestive, Endocrine, Immune/Hematopoietic
HODAE92	Y91546	WO200006698-A1	Cancer
HODDF13	Y91547	WO200006698-A1	Reproductive
HATEF60	Y91548	WO200006698-A1	Cancer
HLTHG37	Y91549	WO200006698-A1	Cancer
HAMGR28	Y91550	WO200006698-A1	Cancer
HDPKB18	Y91551	WO200006698-A1	Immune/Hematopoietic
HEQCC55	Y91552	WO200006698-A1	Cancer
HEONM66	Y91554	WO200006698-A1	Immune/Hematopoietic
HKAEG43	Y91555	WO200006698-A1	Cancer
HLHDP65	Y91556	WO200006698-A1	Cancer
HOEEU24	Y91557	WO200006698-A1	Cancer
HHEAH25	Y91558	WO200006698-A1	Cancer
HCYBN55	Y91559	WO200006698-A1	Cancer
HEONX38	Y91560	WO200006698-A1	Cancer
HFIHO70	Y91561	WO200006698-A1	Cancer
HACCI17	Y91562	WO200006698-A1	Cancer
HDPBO81	Y91563	WO200006698-A1	Digestive, Immune/Hematopoietic, Reproductive
HAMGR28	Y91599	WO200006698-A1	Cancer
HDPKB18	Y91603	WO200006698-A1	Immune/Hematopoietic
HEQCC55	Y91604	WO200006698-A1	Cancer
HLHDP65	Y91631	WO200006698-A1	Cancer
HOEEU24	Y91643	WO200006698-A1	Cancer
HHEAH25	Y91647	WO200006698-A1	Cancer
HHEAH25	Y91648	WO200006698-A1	Cancer
HLIBD68	Y91656	WO200006698-A1	Cancer
HCYBN55	Y91670	WO200006698-A1	Cancer
HEONX38	Y91672	WO200006698-A1	Cancer
HFIHO70	Y91679	WO200006698-A1	Cancer
HMKBA64	Y91681	WO200006698-A1	Cancer
HACCI17	Y91683	WO200006698-A1	Cancer
HMKEA94	Y93650	WO200036105-A1	Cancer
HE9SF68	Y93973	WO200042189-A1	Cancer
HTSGS30	Y93974	WO200042189-A1	Digestive, Immune/Hematopoietic, Mixed Fetal
HDQAC88	Y95534	WO200040726-A1	Cancer
HDPMM34	Y96280	WO200028035-A1	Cancer
HKABZ65	Y96962	WO200039327-A1	Connective/Epithelial
HWHGB15	Y96963	WO200039327-A1	Connective/Epithelial
HCDDP40	Y96964	WO200039327-A1	Immune/Hematopoietic, Musculoskeletal
HETBE01	B03767	US6066724-A	Cancer
HETGI70	B03768	US6066724-A	Cancer
HETDK42	B03769	US6066724-A	Cancer
HTEMZ33	B07705	WO200043493-A2	Cancer
HE8AW20	B07941	US6103871-A	Cancer

HNEDU15	B08659	WO200050597-A2	Cancer
HLTBT71	B08661	WO200050597-A2	Cancer
HBICD95	B08785	WO200050620-A2	Cancer
HE9CC44	B08786	US6110893-A	Cancer
HPRCC57	B10293	US6077692-A	Cancer
HPRCC57	B10304	US6077692-A	Cancer
HPRCC57	B10310	US6077692-A	Cancer
HPRCC57	B10311	US6077692-A	Cancer
HPRCC57	B10312	US6077692-A	Cancer
HPRCC57	B10313	US6077692-A	Cancer
HPRCC57	B10316	US6077692-A	Cancer
HPRCC57	B10320	US6077692-A	Cancer
HILBX90	B11125	US6133422-A	Cancer
HCQAS17	B12900	US6080722-A	Digestive, Mixed Fetal, Reproductive
HBMSE33	B15366	WO200042165-A2	Cancer
HE2BG16	B15413	US6090575-A	Cancer
HT4CC72	B18618	WO200053223-A1	Immune/Hematopoietic
HAPOR40	B18750	WO200055204-A1	Cancer
HTSGS30	B18755	WO200055204-A1	Digestive, Immune/Hematopoietic, Mixed Fetal
HFGAM58	B18803	WO200053210-A1	Cancer
HSDFB55	B19550	WO200053793-A1	Cancer
HUVEO91	B19863	WO200066608-A1	Cancer
HCDDP40	B25583	WO200029435-A1	Immune/Hematopoietic, Musculoskeletal
HMELK96	B26981	WO200056862-A1	Cancer
HMELK96	B26987	WO200056862-A1	Cancer
HTTBN61	B26990	WO200056862-A1	Cancer
HCUDS60	B26991	WO200056862-A1	Cancer
HLYBX88	B26992	WO200056862-A1	Cancer
HILBI36	B28524	US6130051-A	Cancer
HLYBX88	B29790	WO200066156-A1	Cancer
HCEMP60	B29923	US6130061-A	Cancer
HE8AE45	B33821	WO200056753-A1	Cancer
HE2OA95	B33822	WO200056753-A1	Cancer
HJACE54	B35705	WO200063221-A2	Cancer
HTTBN61	B36265	WO200064465-A1	Cancer
HPRCB54	B36696	WO200071150-A1	Cancer
HSDME38	B39392	WO200057903-A2	Cancer
HSDME38	B39393	WO200057903-A2	Cancer
HPDDY64	B43604	WO200055350-A1	Cancer
HPABA51	B44685	WO200058339-A2	Cancer
HPMSM24	B45376	WO200061628-A1	Cancer
HOUCQ17	B50002	WO200071577-A1	Cancer
HODAH63	B50272	WO200071567-A2	Neural/Sensory, Reproductive
HODAH63	B50282	WO200071567-A2	Neural/Sensory, Reproductive
HODAH63	B50283	WO200071567-A2	Neural/Sensory, Reproductive
HCEGY95	B50289	WO200071582-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory

HE9CC44	B50293	WO200071715-A1	Cancer
HAGAT55	B50294	WO200071715-A1	Cancer
HAGAT55	B50704	WO200071152-A1	Cancer
HKABO35	B50892	WO200073321-A1	Cancer
HETJY78	B51152	US6153739-A	Cancer
HPRCC57	B58248	WO200055180-A2	Cancer
HHFCU19	B58276	WO200055180-A2	Cancer
HNFA09	B58319	WO200055180-A2	Cancer
HBZSD43	B58925	WO200055173-A1	Cancer
HHFHJ57	B58970	WO200055173-A1	Cancer
HPRCC57	B60201	WO200072872-A1	Cancer
HPRCC57	B60204	WO200072872-A1	Cancer
HPRCC57	B60206	WO200072872-A1	Cancer
HPRCC57	B60207	WO200072872-A1	Cancer
HPRCC57	B60208	WO200072872-A1	Cancer
HPRCC57	B60209	WO200072872-A1	Cancer
HPRCC57	B60210	WO200072872-A1	Cancer
HPRCC57	B60212	WO200072872-A1	Cancer
HPRCC57	B60214	WO200072872-A1	Cancer
HRGBQ38	B64643	WO200077197-A1	Cancer
HRGBQ38	B64644	WO200077197-A1	Cancer
HRGBQ38	B64645	WO200077197-A1	Cancer
HRGBQ38	B64646	WO200077197-A1	Cancer
HLTBT71	B64873	WO200077256-A1	Cancer
HTEIX55	B64953	WO200076530-A1	Cancer
HPABA51	R75085	ZA9403789-A	Cancer
HAPAT57	R76127	WO9517092-A	Cancer
HWFBD68	R76128	WO9517092-A	Cancer
HMP5A79	R77649	WO9532282-A1	Cancer
HGBAB73	R79008	WO9520678-A1	Cancer
HLTAW73	R79009	WO9520678-A1	Cancer
HFCAW19	R80095	WO9527781-A1	Cancer
HHFBT80	R80575	WO9524474-A1	Cancer
HFKCU96	R81309	WO9519985-A1	Cancer
HSRAW34	R81461	WO9605226-A1	Cancer
HOSBD47	R82686	WO9524473-A1	Cancer
HOSBH74	R82720	WO9524182-A1	Cancer
HE8AE45	R82987	WO9524466-A1	Cancer
HLFBE10	R84522	WO9524411-A1	Cancer
HAGAT55	R85650	WO9524414-A1	Cancer
HIBEC52	R87954	WO9530428-A1	Cancer
HTEAH87	R88390	WO9531539-A1	Cancer
HFBEH64	R88405	WO9531538-A1	Cancer
HAFAK86	R88419	WO9535372-A1	Cancer
HASSB35	R88452	WO9600242-A1	Cancer
HPAAA47	R88481	WO9601270-A1	Cancer
HJPAH22	R90703	WO9600297-A1	Cancer
HIBCL76	R90764	WO9603415-A1	Cancer
HIBEJ89	R90765	WO9603415-A1	Neural/Sensory
HLFBE49	R90919	WO9601896-A	Cancer
HIBCL22	R90989	WO9605225-A1	Cancer
HSSAW84	R91929	WO9612791-A1	Cancer
HSNME29	R92220	WO9604928-A1	Cancer
HSNME29	R92753	WO9605221-A	Cancer
HGBAN46	R93086	WO9605856-A1	Cancer

HE9DR66	R93087	WO9605856-A1	Cancer
HTPAN40	R93118	WO9606862-A	Cancer
HILBI36	R93156	WO9608557-A1	Cancer
HJBAQ29	R94350	WO9609311-A1	Cancer
HASAC73	R94601	WO9611259-A1	Cancer
HPLAP22	R94602	WO9611259-A1	Cancer
HT2SA16	R95634	WO9614394-A1	Cancer
HLHAC42	R95692	WO9615806-A1	Cancer
HE2CA82	R95830	WO9613603-A1	Cancer
HTOBA30	R95831	WO9613603-A1	Cancer
HFSBE16	R97222	WO9616087-A1	Cancer
HHFCU19	R97565	WO9621736-A1	Cancer
HE8AW20	R97739	WO9615222-A1	Cancer
HSBBC75	R97978	WO9615147-A1	Cancer
HLFBG09	R98224	WO9612501-A1	Cancer
HHPEC49	R98261	WO9611946-A1	Cancer
HFGAM58	R98265	WO9618725-A1	Cancer
HUVCT01	R98994	WO9617931-A1	Cancer
HFSAG79	R99329	WO9624668-A1	Cancer
HATBG78	R99353	WO9627009-A1	Endocrine
HUVEO91	R99453	WO9614328-A1	Cancer
HPRCC57	W00176	WO9625422-A1	Cancer
HCAAA02	W00482	WO9621724-A1	Cancer
HETAN67	W01097	WO9629401-A1	Cancer
HSSNB01	W01098	WO9629401-A1	Cancer
HETJY78	W01619	WO9635778-A1	Cancer
HPRAJ70	W01730	WO9639435-A1	Cancer
HNFA09	W02151	WO9625432-A1	Cancer
HFSBC65	W02613	WO9618730-A1	Cancer
HE2BG16	W04247	WO9630406-A1	Cancer
HTECE68	W05295	WO9630524-A1	Cancer
HRGBQ38	W05313	WO9623410-A1	Cancer
HFCCE09	W05314	WO9623410-A1	Cancer
HGOCA18	W05315	WO9623410-A1	Cancer
HT1SB52	W05809	WO9634095-A1	Cancer
HFGAN72	W06124	WO9634877-A1	Cancer
HHFBT80	W06539	WO9639431-A1	Cancer
HCNAY46	W06545	WO9639419-A1	Cancer
HCQDM23	W06546	WO9639419-A1	Digestive, Reproductive
HCNUB65	W06548	WO9639419-A1	Cancer
HCNSE58	W06550	WO9639419-A1	Cancer
HCNBB33	W06551	WO9639419-A1	Cancer
HKLSA58	W06552	WO9639419-A1	Cancer
HCNSD13	W06553	WO9639419-A1	Cancer
HLQBI14	W06575	WO9639520-A1	Cancer
HAECD08	W07202	WO9634891-A1	Cancer
HWFBD68	W07203	WO9634891-A1	Cancer
HAPAT57	W07204	WO9634891-A1	Cancer
HDGNR10	W07602	WO9639437-A1	Digestive, Immune/Hematopoietic, Reproductive
HMSDB49	W07604	WO9639521-A1	Immune/Hematopoietic, Reproductive
HFSAG79	W07605	WO9639522-A1	Cancer

HTOEX74	W07606	WO9639522-A1	Cancer
HMWCF06	W07611	WO9639421-A1	Cancer
HIBEB69	W07617	WO9639438-A1	Cancer
HGBER32	W07618	WO9639434-A1	Digestive
HETGQ23	W07619	WO9639436-A1	Cancer
HE2OA95	W07663	WO9636709-A1	Cancer
HCEGY95	W08079	WO9639506-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HIBEF51	W08101	WO9639441-A1	Neural/Sensory
HTNAD29	W08141	WO9639442-A1	Cancer
HE9CC44	W08142	WO9639507-A1	Cancer
HDGRC02	W09110	WO9639440-A1	Cancer
HPTTT24	W09111	WO9639420-A1	Digestive, Endocrine
HUVDR03	W09404	WO9639485-A1	Cancer
HPBCB95	W09405	WO9639158-A1	Cancer
HE9NG77	W09408	WO9639486-A1	Cancer
HATCK89	W09432	WO9639509-A1	Cancer
HTOEX74	W10574	WO9624668-A1	Cancer
HOSBD47	W11478	WO9639515-A1	Cancer
HCQAS17	W12691	WO9639541-A1	Digestive, Mixed Fetal, Reproductive
HCACU62	W12692	WO9639424-A1	Cancer
HAQBM60	W12693	WO9639418-A1	Connective/Epithelial, Immune/Hematopoietic, Reproductive
HLTDG74	W12695	WO9639433-A1	Immune/Hematopoietic
HODAH63	W12696	WO9639508-A1	Neural/Sensory, Reproductive
HSSAW84	W17043	US5618717-A	Cancer
HHSAN40	W17838	WO9717358-A1	Cancer
HTPBS22	W19632	WO9722623-A1	Cancer
HSATU68	W19780	WO9725340-A1	Cancer
HFCBS02	W22408	WO9711970-A1	Cancer
HGBAN46	W22669	WO9731098-A1	Cancer
HE9DR66	W22670	WO9731098-A1	Cancer
HE9DR66	W22671	WO9731098-A1	Cancer
HE9DR66	W22672	WO9731098-A1	Cancer
HE9DR66	W22673	WO9731098-A1	Cancer
HE9DR66	W22674	WO9731098-A1	Cancer
HE9DR66	W22675	WO9731098-A1	Cancer
HPMSM24	W22732	WO9724929-A1	Cancer
HPABA51	W22882	US5635616-A	Cancer
HESAJ20	W23663	WO9729189-A1	Cancer
HALTA54	W24137	WO9723640-A1	Cancer
HCEMP60	W24847	WO9718224-A1	Cancer
HFCCE09	W25112	US5650313-A	Cancer
HGOCA18	W25113	US5650313-A	Cancer
HRGBQ38	W25114	US5650313-A	Cancer
HTPAN40	W26464	US5654172-A	Cancer
HTECD31	W27087	WO9725349-A1	Cancer
HLHDC84	W27118	WO9725338-A1	Cancer
HTPAN08	W27134	WO9733899-A1	Cancer
HFKET35	W27152	WO9734013-A1	Cancer



HTTER36	W27224	WO9735870-A1	Cardiovascular, Connective/Epithelial, Reproductive
HTOBH93	W27561	WO9727747-A1	Cancer
HE6BK61	W29291	WO9735010-A1	Cancer
HE6BK61	W29292	WO9735010-A1	Cancer
HTOJK64	W30193	WO9735976-A2	Cancer
HLMBA70	W30891	WO9735028-A1	Immune/Hematopoietic, Mixed Fetal, Reproductive
HMEIP65	W31512	WO9732993-A1	Cancer
HTTBN61	W31517	WO9733904-A1	Cancer
HFLQA68	W31527	WO9737022-A1	Cancer
HE8AW20	W31692	US5695980-A	Cancer
HTXEI33	W31759	WO9733898-A1	Cancer
HCUDE60	W31902	WO9737021-A1	Cancer
HCABA58	W32110	WO9738012-A1	Cancer
HMEAN51	W32112	WO9734998-A1	Cancer
HT4CC72	W32255	WO9734911-A1	Immune/Hematopoietic
HCUDE60	W32323	WO9736915-A1	Cancer
HSAAU35	W33603	WO9747742-A1	Connective/Epithelial, Musculoskeletal, Reproductive
HETBE01	W35802	WO9734997-A1	Cancer
HETGI70	W35803	WO9734997-A1	Cancer
HETDK42	W35804	WO9734997-A1	Cancer
HBJEL88	W35904	WO9738003-A1	Cancer
HSHCL68	W36449	WO9735027-A1	Cancer
HLTBT71	W37002	WO9733902-A1	Cancer
HPDDO12	W37003	WO9733902-A1	Cancer
HHPEC49	W37799	US5750370-A	Cancer
HCQAJ72	W37844	WO9807749-A1	Cancer
HMECG71	W37845	WO9807749-A1	Cancer
HSIEH63	W37846	WO9807749-A1	Digestive
HBICD95	W37847	WO9807880-A1	Cancer
HMQBM23	W37935	WO9808870-A1	Cancer
HOEBG39	W37946	WO9821236-A1	Cancer
HOSBH74	W39216	EP812916-A2	Cancer
HOSBH74	W39264	EP812916-A2	Cancer
HOSBH74	W39265	EP812916-A2	Cancer
HOSBH74	W39266	EP812916-A2	Cancer
HOSBH74	W39267	EP812916-A2	Cancer
HOSBH74	W39268	EP812916-A2	Cancer
HODAH63	W40077	US5728546-A	Neural/Sensory, Reproductive
HFBEH64	W41362	US5723311-A	Cancer
HSAAU35	W41502	EP812913-A2	Connective/Epithelial, Musculoskeletal, Reproductive
HSAAU35	W41520	WO9747741-A1	Connective/Epithelial, Musculoskeletal, Reproductive
HOSBH74	W41645	WO9747642-A1	Cancer
HTSEX82	W41938	WO9748807-A1	Digestive, Immune/Hematopoietic
HIBCL76	W42995	US5710019-A	Cancer

HIBEJ89	W42996	US5710019-A	Neural/Sensory
HILBI36	W46518	US5716806-A	Cancer
HCNAY46	W46876	US5733748-A	Cancer
HCQDM23	W46877	US5733748-A	Digestive, Reproductive
HCNUB65	W46879	US5733748-A	Cancer
HCNSE58	W46882	US5733748-A	Cancer
HCNBB33	W46883	US5733748-A	Cancer
HKLSA58	W46884	US5733748-A	Cancer
HCNSD13	W46885	US5733748-A	Cancer
HEMEM90	W48334	WO9807881-A1	Cancer
HE9BK24	W48335	WO9807754-A1	Cancer
HPASD50	W48391	WO9807735-A1	Cancer
HETAN67	W48762	WO9812204-A1	Cancer
HHFHJ57	W49032	WO9825957-A2	Cancer
HGBER32	W49807	US5776729-A	Digestive
HATCK89	W49826	US5773252-A	Cancer
HCEPR64	W51244	WO9821242-A1	Cancer
HPRCC57	W52581	WO9806844-A1	Cancer
HPRCC57	W52582	WO9806844-A1	Cancer
HPRCC57	W52583	WO9806844-A1	Cancer
HPRCC57	W52584	WO9806844-A1	Cancer
HPRCC57	W52585	WO9806844-A1	Cancer
HPRCC57	W52586	WO9806844-A1	Cancer
HPRCC57	W52587	WO9806844-A1	Cancer
HPRCC57	W52588	WO9806844-A1	Cancer
HPRCC57	W52590	WO9806844-A1	Cancer
HPRCC57	W52591	WO9806844-A1	Cancer
HPRCC57	W52592	WO9806844-A1	Cancer
HPRCC57	W52593	WO9806844-A1	Cancer
HPRCC57	W52594	WO9806844-A1	Cancer
HPRCC57	W52595	WO9806844-A1	Cancer
HPRCC57	W52596	WO9806844-A1	Cancer
HPRCC57	W52597	WO9806844-A1	Cancer
HPRCC57	W52598	WO9806844-A1	Cancer
HPRCC57	W52599	WO9806844-A1	Cancer
HDQMB53	W52842	WO9807862-A2	Cancer
HWFB68	W52843	WO9807862-A2	Cancer
HPMFW51	W53121	WO9806859-A1	Cancer
HPMFW51	W53122	WO9806859-A1	Cancer
HPRCC57	W53787	WO9806844-A1	Cancer
HPRCC57	W53792	WO9806844-A1	Cancer
HPRCC57	W53793	WO9806844-A1	Cancer
HMEJ22	W53897	WO9808969-A1	Cancer
HE9CC44	W54036	US5763214-A	Cancer
HMQCD14	W55884	WO9806733-A1	Cancer
HUVDE75	W56249	WO9806839-A1	Cancer
HCNBB33	W56503	WO9815624-A1	Cancer
HTPBR22	W56504	WO9815624-A1	Cancer
HETAS87	W56505	WO9815624-A1	Cancer
HETAS87	W56506	WO9815624-A1	Cancer
HPRAJ70	W56641	US5756309-A	Cancer
HAICL46	W57044	WO9811138-A1	Cancer
HAECD08	W57688	WO9814582-A1	Cancer
HAECD08	W57691	WO9814582-A1	Cancer

HAECD08	W57692	WO9814582-A1	Cancer
HAECD08	W57693	WO9814582-A1	Cancer
HAECD08	W57694	WO9814582-A1	Cancer
HAECD08	W57695	WO9814582-A1	Cancer
HWFBD68	W57697	WO9814582-A1	Cancer
HAPAT57	W57698	WO9814582-A1	Cancer
HAECD08	W57699	WO9814582-A1	Cancer
HAECD08	W57701	WO9814582-A1	Cancer
HMSDB49	W57881	WO9824908-A1	Immune/Hematopoietic, Reproductive
HNEDU15	W58391	WO9818921-A1	Cancer
HE9NG77	W58704	US5780263-A	Cancer
HFSAG79	W58900	WO9814477-A1	Cancer
HTOEX74	W58901	WO9814477-A1	Cancer
HTOEX74	W58902	WO9814477-A1	Cancer
HTOEX74	W58903	WO9814477-A1	Cancer
HTOEX74	W58904	WO9814477-A1	Cancer
HTOEX74	W58905	WO9814477-A1	Cancer
HTOEX74	W58906	WO9814477-A1	Cancer
HTOEX74	W58907	WO9814477-A1	Cancer
HTOEX74	W58908	WO9814477-A1	Cancer
HTOEX74	W58909	WO9814477-A1	Cancer
HTOEX74	W58910	WO9814477-A1	Cancer
HTOEX74	W58911	WO9814477-A1	Cancer
HTOEX74	W58912	WO9814477-A1	Cancer
HTOEX74	W58913	WO9814477-A1	Cancer
HTOEX74	W58914	WO9814477-A1	Cancer
HTOEX74	W58915	WO9814477-A1	Cancer
HTOEX74	W58916	WO9814477-A1	Cancer
HTOEX74	W58917	WO9814477-A1	Cancer
HTOEX74	W58918	WO9814477-A1	Cancer
HTOEX74	W58919	WO9814477-A1	Cancer
HTOEX74	W58920	WO9814477-A1	Cancer
HTOEX74	W58921	WO9814477-A1	Cancer
HTOEX74	W58922	WO9814477-A1	Cancer
HTOEX74	W58923	WO9814477-A1	Cancer
HTOEX74	W58924	WO9814477-A1	Cancer
HTOEX74	W58925	WO9814477-A1	Cancer
HTOEX74	W58926	WO9814477-A1	Cancer
HTOEX74	W58927	WO9814477-A1	Cancer
HTOEX74	W58928	WO9814477-A1	Cancer
HTOEX74	W58929	WO9814477-A1	Cancer
HTOEX74	W58930	WO9814477-A1	Cancer
HTOEX74	W58931	WO9814477-A1	Cancer
HTOEX74	W58932	WO9814477-A1	Cancer
HTOEX74	W58933	WO9814477-A1	Cancer
HTOEX74	W58934	WO9814477-A1	Cancer
HTOEX74	W58935	WO9814477-A1	Cancer
HTOEX74	W58936	WO9814477-A1	Cancer
HTOEX74	W58937	WO9814477-A1	Cancer
HTOEX74	W58938	WO9814477-A1	Cancer
HTOEX74	W58939	WO9814477-A1	Cancer
HTOEX74	W58940	WO9814477-A1	Cancer
HTOEX74	W58941	WO9814477-A1	Cancer
HFSAG79	W58942	WO9814477-A1	Cancer

HFSAG79	W58943	WO9814477-A1	Cancer
HFSAG79	W58944	WO9814477-A1	Cancer
HFSAG79	W58945	WO9814477-A1	Cancer
HFSAG79	W58946	WO9814477-A1	Cancer
HFSAG79	W58947	WO9814477-A1	Cancer
HFSAG79	W58948	WO9814477-A1	Cancer
HFSAG79	W58949	WO9814477-A1	Cancer
HFSAG79	W58950	WO9814477-A1	Cancer
HFSAG79	W58951	WO9814477-A1	Cancer
HFSAG79	W58952	WO9814477-A1	Cancer
HFSAG79	W58953	WO9814477-A1	Cancer
HFSAG79	W58954	WO9814477-A1	Cancer
HFSAG79	W58955	WO9814477-A1	Cancer
HFSAG79	W58956	WO9814477-A1	Cancer
HFSAG79	W58957	WO9814477-A1	Cancer
HFSAG79	W58958	WO9814477-A1	Cancer
HFSAG79	W58959	WO9814477-A1	Cancer
HFSAG79	W58960	WO9814477-A1	Cancer
HFSAG79	W58961	WO9814477-A1	Cancer
HFSAG79	W58962	WO9814477-A1	Cancer
HFSAG79	W58963	WO9814477-A1	Cancer
HFSAG79	W58964	WO9814477-A1	Cancer
HFSAG79	W58965	WO9814477-A1	Cancer
HFSAG79	W58966	WO9814477-A1	Cancer
HFSAG79	W58967	WO9814477-A1	Cancer
HFSAG79	W58968	WO9814477-A1	Cancer
HFSAG79	W58969	WO9814477-A1	Cancer
HFSAG79	W58970	WO9814477-A1	Cancer
HFSAG79	W58971	WO9814477-A1	Cancer
HFSAG79	W58972	WO9814477-A1	Cancer
HFSAG79	W58973	WO9814477-A1	Cancer
HFSAG79	W58974	WO9814477-A1	Cancer
HFSAG79	W58975	WO9814477-A1	Cancer
HCEGH45	W59666	WO9824900-A1	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HHFCU19	W59753	US5786193-A	Cancer
HLMBP36	W59872	WO9831792-A1	Cancer
HEMFI85	W59873	WO9831800-A2	Cancer
HTXET53	W59874	WO9831800-A2	Cancer
HBZAK03	W59876	WO9831800-A2	Cancer
HLFBD44	W59877	WO9831800-A2	Cancer
HEBGM49	W59878	WO9831800-A2	Cancer
HNGBH54	W59879	WO9831800-A2	Cancer
HSAAL25	W59880	WO9831800-A2	Cancer
HSXCK41	W59882	WO9831800-A2	Cancer
HFIFY79	W59883	WO9831800-A2	Cancer
HAICH28	W59884	WO9831800-A2	Cancer
HT1SB52	W60045	WO9818824-A1	Cancer
HSDFB55	W60054	WO9816643-A1	Cancer
HEBBC23	W60607	WO9820110-A1	Immune/Hematopoietic, Musculoskeletal, Neural/Sensory
HTPBS22	W61600	WO9831798-A1	Cancer
HMACR70	W61616	WO9831799-A2	Cancer

HTEDK48	W61617	WO9831799-A2	Cancer
HTPEF86	W61619	WO9831799-A2	Cancer
HSBBF02	W61620	WO9831799-A2	Cancer
HLTAH80	W61621	WO9831799-A2	Cancer
HTPBA27	W61622	WO9831799-A2	Cancer
HAIDQ59	W61623	WO9831799-A2	Cancer
HHFEK40	W61624	WO9831799-A2	Cancer
HGBGV89	W61625	WO9831799-A2	Digestive
HUVBB80	W61626	WO9831799-A2	Cancer
HJACE54	W61627	WO9831799-A2	Cancer
HROAD63	W61628	WO9831799-A2	Connective/Epithelial, Digestive
HMWGS46	W61629	WO9831799-A2	Cancer
HNFGW06	W61630	WO9831799-A2	Cancer
HFCAR05	W61912	WO9820042-A1	Cancer
HHFHG78	W62595	WO9827932-A2	Cancer
HBGBA67	W63123	WO9833915-A1	Cancer
HPHAE52	W63622	WO9830694-A2	Cancer
HTPCH84	W63623	WO9830694-A2	Cancer
HEBCI67	W64433	WO9829438-A2	Cancer
HCUDS60	W64483	WO9832856-A1	Cancer
HPRCB54	W64668	WO9830693-A2	Cancer
HTOCD71	W69220	WO9828421-A1	Cancer
HSGSA61	W69221	WO9828420-A1	Cancer
HSLAZ11	W69229	WO9831801-A1	Cancer
HCEBJ50	W69230	WO9831801-A1	Cancer
HMQDO20	W69231	WO9831806-A2	Cancer
HDPMK33	W69232	WO9831806-A2	Cancer
HMPAP73	W69233	WO9831806-A2	Immune/Hematopoietic
HMSHH46	W69234	WO9831806-A2	Cancer
HMAAB68	W69235	WO9831806-A2	Digestive, Immune/Hematopoietic
HSDME38	W69508	WO9828422-A1	Cancer
HOEBN05	W70286	WO9833920-A2	Cancer
HDPMJ44	W70287	WO9835039-A1	Cancer
HODAH63	W70330	WO9823749-A1	Neural/Sensory, Reproductive
HETDW91	W70458	WO9838311-A1	Cancer
HE8CV92	W70459	WO9838311-A1	Cancer
HIBCL22	W70501	US5817477-A	Cancer
HKFBA76	W70525	WO9844111-A1	Cancer
HKFBA76	W70526	WO9844111-A1	Cancer
HMSAF34	W70594	WO9844118-A1	Cancer
HMSAF34	W70596	WO9844118-A1	Cancer
HMSAF34	W70597	WO9844118-A1	Cancer
HRDCD54	W71592	WO9833912-A1	Cancer
HIBEC52	W73130	US5830744-A	Cancer
HSRAW34	W73635	US5861272-A	Cancer
HBWAL95	W76212	WO9837194-A1	Cancer
HTEJQ70	W76251	WO9831818-A2	Cancer
HETBW05	W76253	WO9831818-A2	Digestive, Reproductive
HATBG78	W77493	US5798223-A	Endocrine
HMWGS46	W78168	WO9856804-A1	Cancer
HOUCQ17	W78189	WO9856804-A1	Cancer

HMWGS46	W78295	WO9856804-A1	Cancer
HL YBX88	W79083	WO9841629-A2	Cancer
HTAAW41	W80212	WO9844112-A1	Cancer
HOUCQ17	W80285	EP874050-A2	Cancer
HMELK96	W81059	WO9856892-A1	Cancer
HLJBI75	W81071	WO9851794-A1	Cancer
HFCBS02	W81106	WO9844109-A1	Cancer
HHPGS02	W81576	WO9850549-A2	Cancer
HTOBH93	W83929	US5844081-A	Cancer
HSSAE30	W84184	WO9853069-A2	Cancer
HCQAS17	W84274	US5861494-A	Digestive, Mixed Fetal, Reproductive
HRGBQ38	W85561	US5849286-A	Cancer
HFCCE09	W85562	US5849286-A	Cancer
HGOCA18	W85563	US5849286-A	Cancer
HMSIB42	W87769	WO9854199-A1	Cancer
HTECE68	W89575	US5858705-A	Cancer
HESAJ20	W92460	US5871969-A	Cancer
HESAJ20	W92469	US5871969-A	Cancer
HTXEI33	W92523	US5874240-A	Cancer
HTXEI33	W92524	US5874240-A	Cancer
HKABO35	W92792	WO9854202-A1	Cancer
HCEGH45	W94074	US5869632-A	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HNFIR05	W94466	WO9900415-A1	Cancer
HTTBN61	W95538	JP11000170-A	Cancer
HPFCA19	W96192	WO9900498-A1	Cancer
HPFCA19	W96193	WO9900498-A1	Cancer
HTSGS30	W97350	WO9903982-A1	Digestive, Immune/Hematopoietic, Mixed Fetal
HDTAH85	Y01098	WO9910364-A1	Cancer
HFJAB36	Y02608	WO9923106-A1	Cancer
HDTBS70	Y03231	WO9909152-A1	Cancer
HNGEF08	Y03849	WO9909198-A1	Immune/Hematopoietic, Reproductive
HUKEJ46	Y03850	WO9909198-A1	Digestive, Reproductive
HPASD50	Y04120	WO9909161-A1	Cancer
HPASD50	Y04121	WO9909161-A1	Cancer
HAGFE38	Y05451	WO9857989-A1	Cancer
HFVIF40	Y06461	WO9931116-A1	Cancer
HFCCQ50	Y06462	WO9931116-A1	Cancer
HT4CC72	Y06473	WO9935262-A2	Immune/Hematopoietic
HDPIE88	Y06511	WO9936565-A1	Cancer
HWFBG79	Y10797	WO9907891-A1	Cancer
HDGRC02	Y13736	US5928890-A	Cancer
HFCET92	Y14078	WO9921575-A1	Cancer
HUVEO91	Y14132	WO9923105-A1	Cancer
HUVEO91	Y14133	WO9923105-A1	Cancer
HCABA58	Y16587	US5916769-A	Cancer
HOSBD47	Y22320	US5932540-A	Cancer
HOSBD47	Y22321	US5932540-A	Cancer
HPRCC57	Y23761	WO9932135-A1	Cancer

HMEAA94	Y23884	WO9935160-A1	Cancer
HL1AP03	Y23885	WO9935160-A1	Cancer
HSYBM46	Y23886	WO9935160-A1	Cancer
HFKBC47	Y23887	WO9935160-A1	Cancer
HSSAW84	Y24249	US5929225-A	Cancer
HCUDE60	Y25708	WO9938882-A1	Cancer
HHFCU19	Y27005	US5928924-A	Cancer
HMWJH67	Y28640	WO9940183-A1	Cancer
HKAFV61	Y28642	WO9940183-A1	Cancer
HETDK50	Y28643	WO9940183-A1	Cancer
HKAEF09	Y28644	WO9940183-A1	Cancer
HOSBD47	Y30518	WO9946364-A1	Cancer
HOSBD47	Y30519	WO9946364-A1	Cancer
HILBI36	Y31242	US5955339-A	Cancer
HTAEK53	Y31810	WO9947538-A1	Cancer
HT4CC72	Y31885	WO9942584-A1	Immune/Hematopoietic
HLMBA70	Y32504	US5945309-A	Immune/Hematopoietic, Mixed Fetal, Reproductive
HPRCC57	Y32888	WO9941282-A1	Cancer
HPRCC57	Y32895	WO9941282-A1	Cancer
HPRCC57	Y32896	WO9941282-A1	Cancer
HPRCC57	Y32897	WO9941282-A1	Cancer
HPRCC57	Y32898	WO9941282-A1	Cancer
HPRCC57	Y32901	WO9941282-A1	Cancer
HPRCC57	Y32905	WO9941282-A1	Cancer
HPRCC57	Y32916	WO9941282-A1	Cancer
HMEIP65	Y33847	US5952197-A	Cancer
HFCCQ50	Y36339	WO9931117-A1	Cancer
HFCCQ50	Y36342	WO9931117-A1	Cancer
HRDCD54	Y36648	WO9931117-A1	Cancer
HRDCD54	Y36650	WO9931117-A1	Cancer
HRDCD54	Y36673	WO9931117-A1	Cancer
HTSEX82	Y41161	US5981231-A	Digestive, Immune/Hematopoietic
HGBAN46	Y41163	US5981230-A	Cancer
HE9DR66	Y41164	US5981230-A	Cancer
HRGBQ38	Y42150	US5968797-A	Cancer
HFCCE09	Y42151	US5968797-A	Cancer
HGOCA18	Y42152	US5968797-A	Cancer
HNFEM05	Y42165	WO9927078-A1	Cancer
HJACE54	Y44510	WO200001728-A1	Cancer
HKAEF92	Y44664	WO9962934-A1	Cancer
HBZSD43	Y45003	WO200006589-A1	Cancer
HUVEO91	Y45032	WO200008139-A1	Cancer
HTOBH93	Y49535	US5977309-A	Cancer
HAPOR40	Y49946	WO9914240-A1	Cancer
HHEAC71	Y52158	WO9920758-A1	Connective/Epithelial, Immune/Hematopoietic
HCFAZ22	Y52159	WO9920758-A1	Cancer
HT5EA78	Y52160	WO9920758-A1	Connective/Epithelial, Immune/Hematopoietic
HDPJO39	Y52479	WO9940184-A1	Cancer
HBICD95	Y53061	US5998171-A	Cancer
HTGED19	Y53890	WO9961617-A1	Immune/Hematopoietic

HFPBX96	Y53891	WO9961617-A1	Cancer
HFKCU96	Y54900	US5986069-A	Cancer
HSBBC75	Y55748	US5994103-A	Cancer
HLFBE10	Y55750	US5994103-A	Cancer
HLFBE10	Y57166	US5994301-A	Cancer
HIBCL22	Y57167	US5994506-A	Cancer
HTTER36	Y58185	US6004780-A	Cardiovascular, Connective/Epithelial, Reproductive
HWHGU74	Y59247	WO9962927-A1	Cancer
HSDFB55	Y67239	US6008020-A	Cancer
HE2BG16	Y67356	US5998164-A	Cancer
HKAPI15	Y68800	WO200005371-A1	Connective/Epithelial
HTWAF38	Y69674	US6013483-A	Cancer
HATCK89	Y69675	US6013477-A	Cancer
HAPOR40	Y70591	WO200015759-A1	Cancer
HMUAN45	Y70785	WO200023572-A1	Cancer
HATCK89	Y71884	WO200067775-A1	Cancer
HKGDL36	Y71959	WO200066778-A1	Cancer
HCUDS60	Y72022	WO200067793-A1	Cancer
HCUDS60	Y72023	WO200067793-A1	Cancer
HETAN67	Y78790	US6013469-A	Cancer
HDGNR10	Y80128	US6025154-A	Digestive, Immune/Hematopoietic, Reproductive
HBGBA67	Y87779	US6054289-A	Cancer
HE2CB95	Y87780	US6054289-A	Immune/Hematopoietic, Mixed Fetal
HPTTK55	Y87782	US6054289-A	Cancer
HARAO63	Y87783	US6054289-A	Cancer
HLHAR55	Y87787	US6054289-A	Cancer
HSRDG78	Y87788	US6054289-A	Cancer
HCCAA03	Y87789	US6054289-A	Cancer
HWLLM34	Y90351	WO200052136-A2	Cancer
HA5AA37	Y90352	WO200052136-A2	Cancer
HDBAK85	Y90353	WO200052136-A2	Cancer
HPHAE52	Y90357	WO200052028-A1	Cancer
HTPCH84	Y90358	WO200052028-A1	Cancer
HMKEA94	Y93650	WO200036105-A1	Cancer
HOEDH76	Y93912	WO200039166-A1	Cancer
HOGCC45	Y93951	WO200039136-A2	Cancer
HTSGS30	Y93973	WO200042189-A1	Digestive, Immune/Hematopoietic, Mixed Fetal
HTSGS30	Y93975	WO200042189-A1	Digestive, Immune/Hematopoietic, Mixed Fetal
HMWCF06	Y94802	WO200009148-A1	Cancer
HE9DR66	Y95534	WO200040726-A1	Cancer
HGBAN46	Y95535	WO200040726-A1	Cancer
HE9DR66	Y95563	WO200040726-A1	Cancer
HE9DR66	Y95565	WO200040726-A1	Cancer
HE9DR66	Y95566	WO200040726-A1	Cancer
HE9DR66	Y95567	WO200040726-A1	Cancer
HE9DR66	Y95568	WO200040726-A1	Cancer
HE9DR66	Y95569	WO200040726-A1	Cancer



HE9DR66	Y95570	WO200040726-A1	Cancer
HE9DR66	Y95571	WO200040726-A1	Cancer
HE9DR66	Y95572	WO200040726-A1	Cancer
HE9DR66	Y95573	WO200040726-A1	Cancer
HE9DR66	Y95574	WO200040726-A1	Cancer
HE9DR66	Y95575	WO200040726-A1	Cancer
HE9DR66	Y95576	WO200040726-A1	Cancer
HE9DR66	Y95577	WO200040726-A1	Cancer
HE9DR66	Y95578	WO200040726-A1	Cancer
HHEAC71	Y95879	WO200050459-A1	Connective/Epithelial, Immune/Hematopoietic
HCFAZ22	Y95880	WO200050459-A1	Cancer
HT5EA78	Y95881	WO200050459-A1	Connective/Epithelial, Immune/Hematopoietic
HDBAK85	Y96099	WO200052135-A2	Cancer
HWLLM34	Y96100	WO200052135-A2	Cancer
HA5AA37	Y96101	WO200052135-A2	Cancer
HAPAT57	Y96280	WO200028035-A1	Cancer
HAPAT57	Y96282	WO200028035-A1	Cancer
HKABZ65	Y96962	WO200039327-A1	Connective/Epithelial
HWHGB15	Y96963	WO200039327-A1	Connective/Epithelial
HCDDP40	Y96964	WO200039327-A1	Immune/Hematopoietic, Musculoskeletal
HOSBD47	Y97144	WO200045835-A1	Cancer
HOSBD47	Y97145	WO200045835-A1	Cancer
HFITF82	SEQ ID NO:73		Immune/Hematopoietic, Musculoskeletal
HFITF82	SEQ ID NO:74		Immune/Hematopoietic, Musculoskeletal
HFITF82	SEQ ID NO:75		Immune/Hematopoietic, Musculoskeletal
HFITF82	SEQ ID NO:76		Immune/Hematopoietic, Musculoskeletal
HBZAI19	SEQ ID NO:77		Immune/Hematopoietic, Reproductive
HBZAI19	SEQ ID NO:78		Immune/Hematopoietic, Reproductive
HBZAI19	SEQ ID NO:79		Immune/Hematopoietic, Reproductive
HDPI45	SEQ ID NO:80		Cancer
HDPI45	SEQ ID NO:81		Cancer
HETHW90	SEQ ID NO:82		Cancer
HETHW90	SEQ ID NO:83		Cancer
HETHW90	SEQ ID NO:84		Cancer
HIBEB47	SEQ ID NO:85		Digestive, Mixed Fetal, Neural/Sensory
HIBEB47	SEQ ID NO:86		Digestive, Mixed Fetal, Neural/Sensory
HIBEB47	SEQ ID NO:87		Digestive, Mixed Fetal, Neural/Sensory
HIBEB47	SEQ ID NO:88		Digestive, Mixed Fetal, Neural/Sensory

HLHFR58	SEQ ID NO:89	Cancer
HLHFR58	SEQ ID NO:90	Cancer
HLHFR58	SEQ ID NO:91	Cancer
HLHFR58	SEQ ID NO:92	Cancer
HNGGK54	SEQ ID NO:93	Cancer
HNGGK54	SEQ ID NO:94	Cancer
HNGGK54	SEQ ID NO:95	Cancer
HNGGK54	SEQ ID NO:96	Cancer
HUSIE23	SEQ ID NO:97	Cancer
HUSIE23	SEQ ID NO:98	Cancer
HARMB79	SEQ ID NO:99	Cancer
HARMB79	SEQ ID NO:100	Cancer
HJBCY84	SEQ ID NO:101	Cancer
HJBCY84	SEQ ID NO:102	Cancer
HJBCY84	SEQ ID NO:103	Cancer
HCMSC92	SEQ ID NO:104	Cancer
HCMSC92	SEQ ID NO:105	Cancer
HE2AX96	SEQ ID NO:106	Mixed Fetal
HE2AX96	SEQ ID NO:107	Mixed Fetal
HE2AX96	SEQ ID NO:108	Mixed Fetal
HHPDV90	SEQ ID NO:109	Cancer
HHPDV90	SEQ ID NO:110	Cancer
HHPDV90	SEQ ID NO:111	Cancer
HT2SG64	SEQ ID NO:112	Digestive, Immune/Hematopoietic
HT2SG64	SEQ ID NO:113	Digestive, Immune/Hematopoietic
HT2SG64	SEQ ID NO:114	Digestive, Immune/Hematopoietic
HAGAN21	SEQ ID NO:115	Digestive, Immune/Hematopoietic, Neural/Sensory
HAGAN21	SEQ ID NO:116	Digestive, Immune/Hematopoietic, Neural/Sensory
HAGAN21	SEQ ID NO:117	Digestive, Immune/Hematopoietic, Neural/Sensory
HAGAN21	SEQ ID NO:118	Digestive, Immune/Hematopoietic, Neural/Sensory
HAGAN21	SEQ ID NO:119	Digestive, Immune/Hematopoietic, Neural/Sensory
HEBAH57	SEQ ID NO:120	Neural/Sensory
HEBAH57	SEQ ID NO:121	Neural/Sensory
HEBAH57	SEQ ID NO:122	Neural/Sensory
HETDB76	SEQ ID NO:123	Musculoskeletal, Reproductive
HETDB76	SEQ ID NO:124	Musculoskeletal, Reproductive
HETDB76	SEQ ID NO:125	Musculoskeletal, Reproductive
HETDB76	SEQ ID NO:126	Musculoskeletal, Reproductive
HE8SE91	SEQ ID NO:127	Cancer

HE8SE91	SEQ ID NO:128	Cancer
HE8SE91	SEQ ID NO:129	Cancer
HRGBL78	SEQ ID NO:130	Cancer
HRGBL78	SEQ ID NO:131	Cancer
HRGBL78	SEQ ID NO:132	Cancer
HRGBL78	SEQ ID NO:133	Cancer
HHFUC40	SEQ ID NO:134	Cardiovascular
HHFUC40	SEQ ID NO:135	Cardiovascular
HETCP58	SEQ ID NO:136	Immune/Hematopoietic, Reproductive
HETCP58	SEQ ID NO:137	Immune/Hematopoietic, Reproductive
HETCP58	SEQ ID NO:138	Immune/Hematopoietic, Reproductive
HTTBM40	SEQ ID NO:139	Cancer
HTTBM40	SEQ ID NO:140	Cancer
HTTBS64	SEQ ID NO:141	Reproductive
HTTBS64	SEQ ID NO:142	Reproductive
HTTBS64	SEQ ID NO:143	Reproductive
HCEVB32	SEQ ID NO:144	Cancer
HCEVB32	SEQ ID NO:145	Cancer
HCEVB32	SEQ ID NO:146	Cancer
HCEVB32	SEQ ID NO:147	Cancer
HHPFU18	SEQ ID NO:148	Cancer
HHPFU18	SEQ ID NO:149	Cancer
HPRCA90	SEQ ID NO:150	Cancer
HPRCA90	SEQ ID NO:151	Cancer
HPRCA90	SEQ ID NO:152	Cancer
HPRCA90	SEQ ID NO:153	Cancer
HPRCE33	SEQ ID NO:154	Cancer
HPRCE33	SEQ ID NO:155	Cancer
HHFFU55	SEQ ID NO:156	Cardiovascular, Immune/Hematopoietic
HHFFU55	SEQ ID NO:157	Cardiovascular, Immune/Hematopoietic
HUVDP63	SEQ ID NO:158	Cancer
HUVDP63	SEQ ID NO:159	Cancer
HUVDP63	SEQ ID NO:160	Cancer
HUVDP63	SEQ ID NO:161	Cancer
HUVDP63	SEQ ID NO:162	Cancer
HCEFI77	SEQ ID NO:163	Neural/Sensory
HCEFI77	SEQ ID NO:164	Neural/Sensory
HCEFI77	SEQ ID NO:165	Neural/Sensory
HHFDH56	SEQ ID NO:166	Cancer
HHFDN48	SEQ ID NO:167	Cancer
HHFDN48	SEQ ID NO:168	Cancer
HHFDN48	SEQ ID NO:169	Cancer
HHFDN48	SEQ ID NO:170	Cancer
HHFDN48	SEQ ID NO:171	Cancer
HHFDN67	SEQ ID NO:172	Cardiovascular
HHFDN67	SEQ ID NO:173	Cardiovascular
HHFDG51	SEQ ID NO:174	Connective/Epithelial, Musculoskeletal
HHFDG51	SEQ ID NO:175	Connective/Epithelial, Musculoskeletal
HHFDG51	SEQ ID NO:176	Connective/Epithelial,

			Musculoskeletal
HE8AO36	SEQ ID NO:177		Cancer
HE8AO36	SEQ ID NO:178		Cancer
HE8AO36	SEQ ID NO:179		Cancer
HTPAB57	SEQ ID NO:180		Cancer
HTPAB57	SEQ ID NO:181		Cancer
HTPAB57	SEQ ID NO:182		Cancer
HTPAB57	SEQ ID NO:183		Cancer
HFXAX45	SEQ ID NO:184		Neural/Sensory
HFXAX45	SEQ ID NO:185		Neural/Sensory
HFXAX45	SEQ ID NO:186		Neural/Sensory
HTLBE23	SEQ ID NO:187		Reproductive
HTLBE23	SEQ ID NO:188		Reproductive
HCQAM33	SEQ ID NO:189		Musculoskeletal, Reproductive
HCQAM33	SEQ ID NO:190		Musculoskeletal, Reproductive
HCQAM33	SEQ ID NO:191		Musculoskeletal, Reproductive
HCEWE17	SEQ ID NO:192		Digestive, Neural/Sensory
HCEWE17	SEQ ID NO:193		Digestive, Neural/Sensory
HCEWE17	SEQ ID NO:194		Digestive, Neural/Sensory
HTEGI42	SEQ ID NO:195		Cancer
HTEGI42	SEQ ID NO:196		Cancer
HTEGI42	SEQ ID NO:197		Cancer
HTEGI42	SEQ ID NO:198		Cancer
HTEGI42	SEQ ID NO:199		Cancer
HCEIE80	SEQ ID NO:200		Cancer
HCEIE80	SEQ ID NO:201		Cancer
HCEIE80	SEQ ID NO:202		Cancer
HCEIE80	SEQ ID NO:203		Cancer
HLMCA92	SEQ ID NO:204		Digestive, Immune/Hematopoietic, Neural/Sensory
HLMCA92	SEQ ID NO:205		Digestive, Immune/Hematopoietic, Neural/Sensory
HLMCA92	SEQ ID NO:206		Digestive, Immune/Hematopoietic, Neural/Sensory
HLMCA92	SEQ ID NO:207		Digestive, Immune/Hematopoietic, Neural/Sensory
HLHCF36	SEQ ID NO:208		Respiratory
HLHCF36	SEQ ID NO:209		Respiratory
HLHCF36	SEQ ID NO:210		Respiratory
HCEZR26	SEQ ID NO:211		Cancer
HCEZR26	SEQ ID NO:212		Cancer
HGBCO51	SEQ ID NO:213		Cancer
HGBCO51	SEQ ID NO:214		Cancer
HGBCO51	SEQ ID NO:215		Cancer
HGBCO51	SEQ ID NO:216		Cancer
HTABP30	SEQ ID NO:217		Cancer

HTABP30	SEQ ID NO:218	Cancer
HUKCD10	SEQ ID NO:219	Cancer
HUKCD10	SEQ ID NO:220	Cancer
HUKCD10	SEQ ID NO:221	Cancer
HOUHT39	SEQ ID NO:222	Cancer
HOUHT39	SEQ ID NO:223	Cancer
HOUHT39	SEQ ID NO:224	Cancer
HTXBN56	SEQ ID NO:225	Cancer
HTXBN56	SEQ ID NO:226	Cancer
HTXBN56	SEQ ID NO:227	Cancer
HETEU28	SEQ ID NO:228	Cancer
HETEU28	SEQ ID NO:229	Cancer
HODDD43	SEQ ID NO:230	Cancer
HODDD43	SEQ ID NO:231	Cancer
HODDD43	SEQ ID NO:232	Cancer
HPWAL61	SEQ ID NO:233	Musculoskeletal, Reproductive
HPWAL61	SEQ ID NO:234	Musculoskeletal, Reproductive
HPWAL61	SEQ ID NO:235	Musculoskeletal, Reproductive
HPWAL61	SEQ ID NO:236	Musculoskeletal, Reproductive
HTSER67	SEQ ID NO:237	Cancer
HTSER67	SEQ ID NO:238	Cancer
HMSDL37	SEQ ID NO:239	Cancer
HMSDL37	SEQ ID NO:240	Cancer
HMSDL37	SEQ ID NO:241	Cancer
HMSDL37	SEQ ID NO:242	Cancer
HSDAJ53	SEQ ID NO:243	Cancer
HSDAJ53	SEQ ID NO:244	Cancer
HSDAJ53	SEQ ID NO:245	Cancer
HSDAJ53	SEQ ID NO:246	Cancer
HEBDF05	SEQ ID NO:247	Neural/Sensory
HEBDF05	SEQ ID NO:248	Neural/Sensory
HEBDF05	SEQ ID NO:249	Neural/Sensory
HSQFT30	SEQ ID NO:250	Cancer
HSQFT30	SEQ ID NO:251	Cancer
HSIDX71	SEQ ID NO:252	Digestive, Neural/Sensory
HSIDX71	SEQ ID NO:253	Digestive, Neural/Sensory
HSAUA82	SEQ ID NO:254	Immune/Hematopoietic, Reproductive
HSAUA82	SEQ ID NO:255	Immune/Hematopoietic, Reproductive
HPWAY46	SEQ ID NO:256	Cancer
HPWAY46	SEQ ID NO:257	Cancer
HPWAY46	SEQ ID NO:258	Cancer
HSEN70	SEQ ID NO:259	Cancer
HSEN70	SEQ ID NO:260	Cancer
HTOHB55	SEQ ID NO:261	Cancer
HTOHB55	SEQ ID NO:262	Cancer
HTOHM15	SEQ ID NO:263	Cancer
HTOHM15	SEQ ID NO:264	Cancer
HTOHM15	SEQ ID NO:265	Cancer

HTOHM15	SEQ ID NO:266	Cancer
HHNAB56	SEQ ID NO:267	Digestive
HHNAB56	SEQ ID NO:268	Digestive
HHNAB56	SEQ ID NO:269	Digestive
HJABL02	SEQ ID NO:270	Cancer
HJABL02	SEQ ID NO:271	Cancer
HJACG30	SEQ ID NO:272	Immune/Hematopoietic
HJACG30	SEQ ID NO:273	Immune/Hematopoietic
HJACG30	SEQ ID NO:274	Immune/Hematopoietic
HTAEE28	SEQ ID NO:275	Digestive, Immune/Hematopoietic, Mixed Fetal
HTAEE28	SEQ ID NO:276	Digestive, Immune/Hematopoietic, Mixed Fetal
HTAEE28	SEQ ID NO:277	Digestive, Immune/Hematopoietic, Mixed Fetal
HTHBG43	SEQ ID NO:278	Immune/Hematopoietic
HTHBG43	SEQ ID NO:279	Immune/Hematopoietic
HJPCE80	SEQ ID NO:280	Cancer
HJPCE80	SEQ ID NO:281	Cancer
HJPCE80	SEQ ID NO:282	Cancer
HTOIZ02	SEQ ID NO:283	Cancer
HTOIZ02	SEQ ID NO:284	Cancer
HJPCR70	SEQ ID NO:285	Cancer
HJPCR70	SEQ ID NO:286	Cancer
HJPCR70	SEQ ID NO:287	Cancer
HJPCR70	SEQ ID NO:288	Cancer
HJPCP42	SEQ ID NO:289	Digestive, Immune/Hematopoietic
HJPCP42	SEQ ID NO:290	Digestive, Immune/Hematopoietic
HJPCP42	SEQ ID NO:291	Digestive, Immune/Hematopoietic
HJPCP42	SEQ ID NO:292	Digestive, Immune/Hematopoietic
HNFFD47	SEQ ID NO:293	Immune/Hematopoietic
HNFFD47	SEQ ID NO:294	Immune/Hematopoietic
HNFFD47	SEQ ID NO:295	Immune/Hematopoietic
HNFFI46	SEQ ID NO:296	Cancer
HNFFI46	SEQ ID NO:297	Cancer
HNFFI46	SEQ ID NO:298	Cancer
HNFFI46	SEQ ID NO:299	Cancer
HNFFI46	SEQ ID NO:300	Cancer
HTOIQ42	SEQ ID NO:301	Cancer
HTOIQ42	SEQ ID NO:302	Cancer
HLTDW13	SEQ ID NO:303	Cancer
HLTDW13	SEQ ID NO:304	Cancer
HLTDW13	SEQ ID NO:305	Cancer
HLTDW13	SEQ ID NO:306	Cancer
HLTDW13	SEQ ID NO:307	Cancer
HLTDY51	SEQ ID NO:308	Cancer
HLTDY51	SEQ ID NO:309	Cancer
HNFFZ56	SEQ ID NO:310	Cancer
HNFFZ56	SEQ ID NO:311	Cancer

HNGAV54	SEQ ID NO:312		Immune/Hematopoietic
HNGAV54	SEQ ID NO:313		Immune/Hematopoietic
HSLCA15	SEQ ID NO:314		Cancer
HSLCA15	SEQ ID NO:315		Cancer
HSLCA15	SEQ ID NO:316		Cancer
HSLCA15	SEQ ID NO:317		Cancer
HSLCA15	SEQ ID NO:318		Cancer
HSLCA15	SEQ ID NO:319		Cancer
HSLCP57	SEQ ID NO:320		Cancer
HSLCP57	SEQ ID NO:321		Cancer
HTOJP95	SEQ ID NO:322		Immune/Hematopoietic
HTOJP95	SEQ ID NO:323		Immune/Hematopoietic
HBMVI55	SEQ ID NO:324		Cancer
HBMVI55	SEQ ID NO:325		Cancer
HBMVI55	SEQ ID NO:326		Cancer
HBMVI55	SEQ ID NO:327		Cancer
HBMVI55	SEQ ID NO:328		Cancer
HFXBS68	SEQ ID NO:329		Neural/Sensory
HFXBS68	SEQ ID NO:330		Neural/Sensory
HFXBS68	SEQ ID NO:331		Neural/Sensory
HFXBS68	SEQ ID NO:332		Neural/Sensory
HNGBC07	SEQ ID NO:333		Immune/Hematopoietic
HNGBC07	SEQ ID NO:334		Immune/Hematopoietic
HNGBC07	SEQ ID NO:335		Immune/Hematopoietic
HMSFK67	SEQ ID NO:336		Cancer
HMSFK67	SEQ ID NO:337		Cancer
HMSFK67	SEQ ID NO:338		Cancer
HCE1P80	SEQ ID NO:339		Cancer
HCE1P80	SEQ ID NO:340		Cancer
HCE1P80	SEQ ID NO:341		Cancer
HOUDU29	SEQ ID NO:342		Cancer
HOUDU29	SEQ ID NO:343		Cancer
HOUDU29	SEQ ID NO:344		Cancer
HOUDU29	SEQ ID NO:345		Cancer
HOUDU29	SEQ ID NO:346		Cancer
HHFEC49	SEQ ID NO:347		Cancer
HCE3T57	SEQ ID NO:348		Immune/Hematopoietic, Neural/Sensory, Reproductive
HCE3T57	SEQ ID NO:349		Immune/Hematopoietic, Neural/Sensory, Reproductive
HCE3T57	SEQ ID NO:350		Immune/Hematopoietic, Neural/Sensory, Reproductive
HCE3T57	SEQ ID NO:351		Immune/Hematopoietic, Neural/Sensory, Reproductive
HCE3T57	SEQ ID NO:352		Immune/Hematopoietic, Neural/Sensory, Reproductive
HCE4Y07	SEQ ID NO:353		Cancer
HCE4Y07	SEQ ID NO:354		Cancer
HCE5G23	SEQ ID NO:355		Cancer
HCE5G23	SEQ ID NO:356		Cancer
HCE5G23	SEQ ID NO:357		Cancer

HFCEP45	SEQ ID NO:358		Neural/Sensory
HFCEP45	SEQ ID NO:359		Neural/Sensory
HFCEP45	SEQ ID NO:360		Neural/Sensory
HFCEP45	SEQ ID NO:361		Neural/Sensory
HMWEJ52	SEQ ID NO:362		Immune/Hematopoietic
HMWEJ52	SEQ ID NO:363		Immune/Hematopoietic
HMWEY26	SEQ ID NO:364		Cancer
HMWEY26	SEQ ID NO:365		Cancer
HMWEY26	SEQ ID NO:366		Cancer
HMWEY26	SEQ ID NO:367		Cancer
HMWEY26	SEQ ID NO:368		Cancer
HATDM46	SEQ ID NO:369		Cancer
HATDM46	SEQ ID NO:370		Cancer
HATDM46	SEQ ID NO:371		Cancer
HATDM46	SEQ ID NO:372		Cancer
HATDM46	SEQ ID NO:373		Cancer
HATDM46	SEQ ID NO:374		Cancer
HHFHD37	SEQ ID NO:375		Cardiovascular, Immune/Hematopoietic, Respiratory
HHFHD37	SEQ ID NO:376		Cardiovascular, Immune/Hematopoietic, Respiratory
HHFHI76	SEQ ID NO:377		Cancer
HHFHI76	SEQ ID NO:378		Cancer
HATDZ29	SEQ ID NO:379		Endocrine, Immune/Hematopoietic
HATDZ29	SEQ ID NO:380		Endocrine, Immune/Hematopoietic
HFVGE32	SEQ ID NO:381		Digestive, Immune/Hematopoietic
HFVGE32	SEQ ID NO:382		Digestive, Immune/Hematopoietic
HLHFE92	SEQ ID NO:383		Cancer
HLHFE92	SEQ ID NO:384		Cancer
HLHFE92	SEQ ID NO:385		Cancer
HMKAI25	SEQ ID NO:386		Cancer
HMKAI25	SEQ ID NO:387		Cancer
HMKAI25	SEQ ID NO:388		Cancer
HMKAI25	SEQ ID NO:389		Cancer
HMKAI25	SEQ ID NO:390		Cancer
HNHEI42	SEQ ID NO:391		Endocrine, Immune/Hematopoietic
HNHEI42	SEQ ID NO:392		Endocrine, Immune/Hematopoietic
HNHEI42	SEQ ID NO:393		Endocrine, Immune/Hematopoietic
HNHEI42	SEQ ID NO:394		Endocrine, Immune/Hematopoietic
HNHEI85	SEQ ID NO:395		Digestive, Immune/Hematopoietic, Musculoskeletal
HNHEI85	SEQ ID NO:396		Digestive, Immune/Hematopoietic, Musculoskeletal
HOEDE28	SEQ ID NO:397		Cancer



HOEDE28	SEQ ID NO:398		Cancer
H2CBH03	SEQ ID NO:399		Cancer
HTHCA18	SEQ ID NO:400		Immune/Hematopoietic
HTHCA18	SEQ ID NO:401		Immune/Hematopoietic
HTHCO79	SEQ ID NO:402		Cancer
HTHCO79	SEQ ID NO:403		Cancer
HNGFB76	SEQ ID NO:404		Digestive, Immune/Hematopoietic, Neural/Sensory
HNGFB76	SEQ ID NO:405		Digestive, Immune/Hematopoietic, Neural/Sensory
HNGFB76	SEQ ID NO:406		Digestive, Immune/Hematopoietic, Neural/Sensory
HNGFB76	SEQ ID NO:407		Digestive, Immune/Hematopoietic, Neural/Sensory
HOQBJ82	SEQ ID NO:408		Cancer
HOQBJ82	SEQ ID NO:409		Cancer
HNFHY51	SEQ ID NO:410		Immune/Hematopoietic, Reproductive
HNFHY51	SEQ ID NO:411		Immune/Hematopoietic, Reproductive
HNFHY51	SEQ ID NO:412		Immune/Hematopoietic, Reproductive
HNFHY51	SEQ ID NO:413		Immune/Hematopoietic, Reproductive
HNEEB45	SEQ ID NO:414		Immune/Hematopoietic, Mixed Fetal
HNEEB45	SEQ ID NO:415		Immune/Hematopoietic, Mixed Fetal
HSDFA44	SEQ ID NO:416		Neural/Sensory
HSDFA44	SEQ ID NO:417		Neural/Sensory
HSDFA44	SEQ ID NO:418		Neural/Sensory
HAGEB14	SEQ ID NO:419		Cancer
HAGEB14	SEQ ID NO:420		Cancer
HCGBE81	SEQ ID NO:421		Neural/Sensory, Reproductive
HCGBE81	SEQ ID NO:422		Neural/Sensory, Reproductive
HEOMX53	SEQ ID NO:423		Digestive, Immune/Hematopoietic, Neural/Sensory
HEOMX53	SEQ ID NO:424		Digestive, Immune/Hematopoietic, Neural/Sensory
HEOMX53	SEQ ID NO:425		Digestive, Immune/Hematopoietic, Neural/Sensory
HEONC95	SEQ ID NO:426		Cancer
HEONC95	SEQ ID NO:427		Cancer
HKMLP68	SEQ ID NO:428		Excretory, Mixed Fetal, Reproductive
HKMLP68	SEQ ID NO:429		Excretory,

			Mixed Fetal, Reproductive
HKMLP68	SEQ ID NO:430		Excretory, Mixed Fetal, Reproductive
HMWIG83	SEQ ID NO:431		Cancer
HMWIG83	SEQ ID NO:432		Cancer
HMSKH19	SEQ ID NO:433		Cancer
HMSKH19	SEQ ID NO:434		Cancer
HMSKH19	SEQ ID NO:435		Cancer
HFAME37	SEQ ID NO:436		Neural/Sensory
HFAME37	SEQ ID NO:437		Neural/Sensory
HFAME37	SEQ ID NO:438		Neural/Sensory
HFXFG45	SEQ ID NO:439		Immune/Hematopoietic, Neural/Sensory
HFXFG45	SEQ ID NO:440		Immune/Hematopoietic, Neural/Sensory
HFXFG45	SEQ ID NO:441		Immune/Hematopoietic, Neural/Sensory
HFXFG45	SEQ ID NO:442		Immune/Hematopoietic, Neural/Sensory
HFXFH04	SEQ ID NO:443		Immune/Hematopoietic, Neural/Sensory
HFXFH04	SEQ ID NO:444		Immune/Hematopoietic, Neural/Sensory
HFXFH04	SEQ ID NO:445		Immune/Hematopoietic, Neural/Sensory
HFXFH04	SEQ ID NO:446		Immune/Hematopoietic, Neural/Sensory
HGCAC66	SEQ ID NO:447		Cancer
HGCAC66	SEQ ID NO:448		Cancer
HSSJF55	SEQ ID NO:449		Musculoskeletal
HSSJF55	SEQ ID NO:450		Musculoskeletal
HFXHM17	SEQ ID NO:451		Cancer
HFXHM17	SEQ ID NO:452		Cancer
HFXHM17	SEQ ID NO:453		Cancer
HFXHM17	SEQ ID NO:454		Cancer
HOSFQ65	SEQ ID NO:455		Cancer
HOSFQ65	SEQ ID NO:456		Cancer
HOSFQ65	SEQ ID NO:457		Cancer
HOSFQ65	SEQ ID NO:458		Cancer
HOSFQ65	SEQ ID NO:459		Cancer
HKGAS32	SEQ ID NO:460		Connective/Epithelial, Neural/Sensory
HKGAS32	SEQ ID NO:461		Connective/Epithelial, Neural/Sensory
HKGAU45	SEQ ID NO:462		Immune/Hematopoietic
HKGAU45	SEQ ID NO:463		Immune/Hematopoietic
HKGAU45	SEQ ID NO:464		Immune/Hematopoietic
HKGBH24	SEQ ID NO:465		Cancer
HKGBH24	SEQ ID NO:466		Cancer
HKGBH24	SEQ ID NO:467		Cancer
HKGBS01	SEQ ID NO:468		Cancer
HKGBS01	SEQ ID NO:469		Cancer
HKGBS01	SEQ ID NO:470		Cancer
HACCL63	SEQ ID NO:471		Cancer

HACCL63	SEQ ID NO:472	Cancer
HACCL63	SEQ ID NO:473	Cancer
HACCL63	SEQ ID NO:474	Cancer
HFIIN69	SEQ ID NO:475	Musculoskeletal, Neural/Sensory, Reproductive
HFIIN69	SEQ ID NO:476	Musculoskeletal, Neural/Sensory, Reproductive
HFIIN69	SEQ ID NO:477	Musculoskeletal, Neural/Sensory, Reproductive
HFIIZ70	SEQ ID NO:478	Cancer
HFIIZ70	SEQ ID NO:479	Cancer
HMIAJ30	SEQ ID NO:480	Cancer
HMIAJ30	SEQ ID NO:481	Cancer
HMIAJ30	SEQ ID NO:482	Cancer
HMIAJ30	SEQ ID NO:483	Cancer
HMIAV73	SEQ ID NO:484	Cancer
HMIAV73	SEQ ID NO:485	Cancer
HMIAV73	SEQ ID NO:486	Cancer
HMIAV73	SEQ ID NO:487	Cancer
HAPOD80	SEQ ID NO:488	Cancer
HISBL03	SEQ ID NO:489	Cancer
HISBL03	SEQ ID NO:490	Cancer
HISBL03	SEQ ID NO:491	Cancer
HISBL03	SEQ ID NO:492	Cancer
HISBL03	SEQ ID NO:493	Cancer
HISBL03	SEQ ID NO:494	Cancer
HISBL03	SEQ ID NO:495	Cancer
HMICK94	SEQ ID NO:496	Cancer
HMICK94	SEQ ID NO:497	Cancer
HMICK94	SEQ ID NO:498	Cancer
HISBF60	SEQ ID NO:499	Cancer
HISBF60	SEQ ID NO:500	Cancer
HISBF60	SEQ ID NO:501	Cancer
HISBF60	SEQ ID NO:502	Cancer
HISBF60	SEQ ID NO:503	Cancer
HMVAV54	SEQ ID NO:504	Immune/Hematopoietic
HMVAV54	SEQ ID NO:505	Immune/Hematopoietic
HMVAV54	SEQ ID NO:506	Immune/Hematopoietic
HMVAV54	SEQ ID NO:507	Immune/Hematopoietic
HMVAV54	SEQ ID NO:508	Immune/Hematopoietic
HPICB53	SEQ ID NO:509	Cancer
HPICB53	SEQ ID NO:510	Cancer
HPICC86	SEQ ID NO:511	Reproductive
HPICC86	SEQ ID NO:512	Reproductive
HPICC86	SEQ ID NO:513	Reproductive
HPICC86	SEQ ID NO:514	Reproductive
HPICC86	SEQ ID NO:515	Reproductive
HPJAP43	SEQ ID NO:516	Cancer
HPJAP43	SEQ ID NO:517	Cancer
HPJAP43	SEQ ID NO:518	Cancer
HPJCG42	SEQ ID NO:519	Immune/Hematopoietic, Reproductive
HPJCG42	SEQ ID NO:520	Immune/Hematopoietic,

			Reproductive
HPJCG42	SEQ ID NO:521		Immune/Hematopoietic, Reproductive
HPJCG42	SEQ ID NO:522		Immune/Hematopoietic, Reproductive
HPJCG42	SEQ ID NO:523		Immune/Hematopoietic, Reproductive
HPJBK11	SEQ ID NO:524		Cardiovascular, Neural/Sensory, Reproductive
HPJBK11	SEQ ID NO:525		Cardiovascular, Neural/Sensory, Reproductive
HPJBK11	SEQ ID NO:526		Cardiovascular, Neural/Sensory, Reproductive
HPJBK12	SEQ ID NO:527		Reproductive
HPJBK12	SEQ ID NO:528		Reproductive
HPJBK12	SEQ ID NO:529		Reproductive
HPJBK12	SEQ ID NO:530		Reproductive
HPJCT08	SEQ ID NO:531		Connective/Epithelial, Reproductive
HPJCT08	SEQ ID NO:532		Connective/Epithelial, Reproductive
HPJCT08	SEQ ID NO:533		Connective/Epithelial, Reproductive
HT4ES80	SEQ ID NO:534		Cancer
HT4ES80	SEQ ID NO:535		Cancer
HT4ES80	SEQ ID NO:536		Cancer
HNTNB49	SEQ ID NO:537		Cancer
HNTNB49	SEQ ID NO:538		Cancer
HNTRS57	SEQ ID NO:539		Cancer
HNTRS57	SEQ ID NO:540		Cancer
HNTRS57	SEQ ID NO:541		Cancer
HNTRS57	SEQ ID NO:542		Cancer
HNTRS57	SEQ ID NO:543		Cancer
HNTSL47	SEQ ID NO:544		Cardiovascular, Digestive
HNTSL47	SEQ ID NO:545		Cardiovascular, Digestive
HNTSL47	SEQ ID NO:546		Cardiovascular, Digestive
HBJLR70	SEQ ID NO:547		Immune/Hematopoietic, Neural/Sensory
HBJLR70	SEQ ID NO:548		Immune/Hematopoietic, Neural/Sensory
HNTSY18	SEQ ID NO:549		Cardiovascular, Reproductive
HNTSY18	SEQ ID NO:550		Cardiovascular, Reproductive
HBHME51	SEQ ID NO:551		Reproductive, Respiratory
HBHME51	SEQ ID NO:552		Reproductive, Respiratory
HBHME51	SEQ ID NO:553		Reproductive, Respiratory

HMCHR48	SEQ ID NO:554		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HMCHR48	SEQ ID NO:555		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HMCHR48	SEQ ID NO:556		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HMCIJ07	SEQ ID NO:557		Immune/Hematopoietic
HMCIJ07	SEQ ID NO:558		Immune/Hematopoietic
HSIFL06	SEQ ID NO:559		Cancer
HSIFL06	SEQ ID NO:560		Cancer
HMZME33	SEQ ID NO:561		Connective/Epithelial, Digestive
HMZME33	SEQ ID NO:562		Connective/Epithelial, Digestive
HMZMF54	SEQ ID NO:563		Digestive
HMZMF54	SEQ ID NO:564		Digestive
HMZMF54	SEQ ID NO:565		Digestive
HMVCQ82	SEQ ID NO:566		Immune/Hematopoietic
HMVCQ82	SEQ ID NO:567		Immune/Hematopoietic
HMVCQ82	SEQ ID NO:568		Immune/Hematopoietic
HMVDP35	SEQ ID NO:569		Immune/Hematopoietic, Reproductive
HMVDP35	SEQ ID NO:570		Immune/Hematopoietic, Reproductive
HMVDP35	SEQ ID NO:571		Immune/Hematopoietic, Reproductive
HMVDF54	SEQ ID NO:572		Cancer
HMVDF54	SEQ ID NO:573		Cancer
HMVDF54	SEQ ID NO:574		Cancer
HROBM46	SEQ ID NO:575		Connective/Epithelial, Digestive
HROBM46	SEQ ID NO:576		Connective/Epithelial, Digestive
HCNDR47	SEQ ID NO:577		Cancer
HCNDR47	SEQ ID NO:578		Cancer
HCNDR47	SEQ ID NO:579		Cancer
HCNDV12	SEQ ID NO:580		Digestive, Reproductive
HCNDV12	SEQ ID NO:581		Digestive, Reproductive
HCNDV12	SEQ ID NO:582		Digestive, Reproductive
HSODE04	SEQ ID NO:583		Digestive
HSODE04	SEQ ID NO:584		Digestive
HBFMC03	SEQ ID NO:585		Digestive, Musculoskeletal, Reproductive
HBFMC03	SEQ ID NO:586		Digestive, Musculoskeletal, Reproductive
HHSFB67	SEQ ID NO:587		Neural/Sensory
HHSFB67	SEQ ID NO:588		Neural/Sensory
HHSFB67	SEQ ID NO:589		Neural/Sensory

HHSFB67	SEQ ID NO:590	Neural/Sensory
HHSBW69	SEQ ID NO:591	Cancer
HHSBW69	SEQ ID NO:592	Cancer
HHSBW69	SEQ ID NO:593	Cancer
HCLCJ15	SEQ ID NO:594	Cancer
HCLCJ15	SEQ ID NO:595	Cancer
HCLCJ15	SEQ ID NO:596	Cancer
HCLCJ15	SEQ ID NO:597	Cancer
HSLJG37	SEQ ID NO:598	Cancer
HSLJG37	SEQ ID NO:599	Cancer
HSLJG37	SEQ ID NO:600	Cancer
HWLEC41	SEQ ID NO:601	Cancer
HWLEC41	SEQ ID NO:602	Cancer
HWLEC41	SEQ ID NO:603	Cancer
HSXEQ06	SEQ ID NO:604	Cancer
HSXEQ06	SEQ ID NO:605	Cancer
HSXEQ06	SEQ ID NO:606	Cancer
HEEAA16	SEQ ID NO:607	Cancer
HEEAA16	SEQ ID NO:608	Cancer
HEEAA16	SEQ ID NO:609	Cancer
HEEAM62	SEQ ID NO:610	Reproductive
HEEAM62	SEQ ID NO:611	Reproductive
HEEAM62	SEQ ID NO:612	Reproductive
HEEAM62	SEQ ID NO:613	Reproductive
HNHKL90	SEQ ID NO:614	Immune/Hematopoietic
HNHKL90	SEQ ID NO:615	Immune/Hematopoietic
HNHKL90	SEQ ID NO:616	Immune/Hematopoietic
HWLFQ64	SEQ ID NO:617	Digestive
HWLFQ64	SEQ ID NO:618	Digestive
HWLFR02	SEQ ID NO:619	Cancer
HWLFR02	SEQ ID NO:620	Cancer
HWLFR02	SEQ ID NO:621	Cancer
HBKED12	SEQ ID NO:622	Cancer
HBKED12	SEQ ID NO:623	Cancer
HBKED12	SEQ ID NO:624	Cancer
HBKED12	SEQ ID NO:625	Cancer
HBKED12	SEQ ID NO:626	Cancer
HWLFJ10	SEQ ID NO:627	Cancer
HWLFJ10	SEQ ID NO:628	Cancer
HCRNO87	SEQ ID NO:629	Cancer
HCRNO87	SEQ ID NO:630	Cancer
HCRNO87	SEQ ID NO:631	Cancer
HCRNO87	SEQ ID NO:632	Cancer
HWLJX42	SEQ ID NO:633	Cancer
HWLJX42	SEQ ID NO:634	Cancer
HWLJX42	SEQ ID NO:635	Cancer
HSPBY63	SEQ ID NO:636	Digestive
HSPBY63	SEQ ID NO:637	Digestive
HSPBY63	SEQ ID NO:638	Digestive
HAPSO15	SEQ ID NO:639	Cancer
HAPSO15	SEQ ID NO:640	Cancer
HAPSO15	SEQ ID NO:641	Cancer
HE8QG24	SEQ ID NO:642	Mixed Fetal
HE8QG24	SEQ ID NO:643	Mixed Fetal
HE8QG24	SEQ ID NO:644	Mixed Fetal

HE8QV43	SEQ ID NO:645	Cancer
HE8QV43	SEQ ID NO:646	Cancer
HE8QV43	SEQ ID NO:647	Cancer
HE8QV43	SEQ ID NO:648	Cancer
HE9QN39	SEQ ID NO:649	Cancer
HE9QN39	SEQ ID NO:650	Cancer
HE9RO44	SEQ ID NO:651	Immune/Hematopoietic, Mixed Fetal
HE9RO44	SEQ ID NO:652	Immune/Hematopoietic, Mixed Fetal
HE9RO44	SEQ ID NO:653	Immune/Hematopoietic, Mixed Fetal
HE9SE18	SEQ ID NO:654	Digestive, Mixed Fetal
HE9SE18	SEQ ID NO:655	Digestive, Mixed Fetal
HE9SE18	SEQ ID NO:656	Digestive, Mixed Fetal
HISCV60	SEQ ID NO:657	Digestive
HISCV60	SEQ ID NO:658	Digestive
HE8UT25	SEQ ID NO:659	Mixed Fetal
HE8UT25	SEQ ID NO:660	Mixed Fetal
HE8UT25	SEQ ID NO:661	Mixed Fetal
HE8UY36	SEQ ID NO:662	Cancer
HE8UY36	SEQ ID NO:663	Cancer
HNHNT13	SEQ ID NO:664	Immune/Hematopoietic
HNHNT13	SEQ ID NO:665	Immune/Hematopoietic
HNHNT13	SEQ ID NO:666	Immune/Hematopoietic
HODEB50	SEQ ID NO:667	Reproductive
HODEB50	SEQ ID NO:668	Reproductive
HODEB50	SEQ ID NO:669	Reproductive
HNGMJ91	SEQ ID NO:670	Immune/Hematopoietic
HNGMJ91	SEQ ID NO:671	Immune/Hematopoietic
HNGMJ91	SEQ ID NO:672	Immune/Hematopoietic
HNGNB69	SEQ ID NO:673	Immune/Hematopoietic
HODFW41	SEQ ID NO:674	Reproductive
HODFW41	SEQ ID NO:675	Reproductive
HNGOI12	SEQ ID NO:676	Immune/Hematopoietic
HNGOI12	SEQ ID NO:677	Immune/Hematopoietic
HNGOI12	SEQ ID NO:678	Immune/Hematopoietic
HNGPM78	SEQ ID NO:679	Immune/Hematopoietic, Neural/Sensory
HNGPM78	SEQ ID NO:680	Immune/Hematopoietic, Neural/Sensory
HYASC80	SEQ ID NO:681	Cancer
HYASC80	SEQ ID NO:682	Cancer
HWLHM66	SEQ ID NO:683	Cancer
HWLHM66	SEQ ID NO:684	Cancer
HWLHM66	SEQ ID NO:685	Cancer
HWLHM66	SEQ ID NO:686	Cancer
HBBBC71	SEQ ID NO:687	Cancer
HBBBC71	SEQ ID NO:688	Cancer
HBBBC71	SEQ ID NO:689	Cancer
HLJBF86	SEQ ID NO:690	Cancer
HLJBF86	SEQ ID NO:691	Cancer
HLJBF86	SEQ ID NO:692	Cancer

HLJB61	SEQ ID NO:693	Cancer
HLJB61	SEQ ID NO:694	Cancer
HHBCS39	SEQ ID NO:695	Cancer
HHBCS39	SEQ ID NO:696	Cancer
HHBCS39	SEQ ID NO:697	Cancer
HLJEA01	SEQ ID NO:698	Respiratory
HLJEA01	SEQ ID NO:699	Respiratory
HLEDB16	SEQ ID NO:700	Cancer
HOGCK63	SEQ ID NO:701	Cancer
HOGCK63	SEQ ID NO:702	Cancer
HOFMQ33	SEQ ID NO:703	Reproductive
HOFMQ33	SEQ ID NO:704	Reproductive
HOFMQ33	SEQ ID NO:705	Reproductive
HOFMQ33	SEQ ID NO:706	Reproductive
HOFMT75	SEQ ID NO:707	Reproductive
HOFMT75	SEQ ID NO:708	Reproductive
HOFMT75	SEQ ID NO:709	Reproductive
HOFMT75	SEQ ID NO:710	Reproductive
HOGCS52	SEQ ID NO:711	Cancer
HOGCS52	SEQ ID NO:712	Cancer
HOGCS52	SEQ ID NO:713	Cancer
HOFNM53	SEQ ID NO:714	Reproductive
HOFNM53	SEQ ID NO:715	Reproductive
HOFNM53	SEQ ID NO:716	Reproductive
HOFNM53	SEQ ID NO:717	Reproductive
HOF0B27	SEQ ID NO:718	Cancer
HOF0B27	SEQ ID NO:719	Cancer
HOF0B27	SEQ ID NO:720	Cancer
HOF0B27	SEQ ID NO:721	Cancer
HOF0C33	SEQ ID NO:722	Reproductive
HOF0C33	SEQ ID NO:723	Reproductive
HOF0C33	SEQ ID NO:724	Reproductive
HOF0C33	SEQ ID NO:725	Reproductive
HOF0C33	SEQ ID NO:726	Reproductive
HOF0C33	SEQ ID NO:727	Reproductive
HOF0C73	SEQ ID NO:728	Cancer
HOF0C73	SEQ ID NO:729	Cancer
HOF0C73	SEQ ID NO:730	Cancer
HOF0C73	SEQ ID NO:731	Cancer
HNTAC64	SEQ ID NO:732	Cancer
HNTAC64	SEQ ID NO:733	Cancer
HNTAC64	SEQ ID NO:734	Cancer
HNTAC64	SEQ ID NO:735	Cancer
HDTBD53	SEQ ID NO:736	Cancer
HDTBD53	SEQ ID NO:737	Cancer
HDTAQ57	SEQ ID NO:738	Cancer
HDTAQ57	SEQ ID NO:739	Cancer
HDTAR06	SEQ ID NO:740	Cancer
HDTAR06	SEQ ID NO:741	Cancer
HDPML23	SEQ ID NO:742	Immune/Hematopoietic, Neural/Sensory
HDPML23	SEQ ID NO:743	Immune/Hematopoietic, Neural/Sensory
HDPML23	SEQ ID NO:744	Immune/Hematopoietic, Neural/Sensory



HDPML23	SEQ ID NO:745		Immune/Hematopoietic, Neural/Sensory
HDPML23	SEQ ID NO:746		Immune/Hematopoietic, Neural/Sensory
HDPMM88	SEQ ID NO:747		Cancer
HDPMM88	SEQ ID NO:748		Cancer
HDPMM88	SEQ ID NO:749		Cancer
HDPMM88	SEQ ID NO:750		Cancer
HDPMM88	SEQ ID NO:751		Cancer
HDPMM88	SEQ ID NO:752		Cancer
HDPMM88	SEQ ID NO:753		Cancer
HDPMS12	SEQ ID NO:754		Cancer
HDPMS12	SEQ ID NO:755		Cancer
HDPMS12	SEQ ID NO:756		Cancer
HDPMS12	SEQ ID NO:757		Cancer
HDPMS12	SEQ ID NO:758		Cancer
HDPMS12	SEQ ID NO:759		Cancer
HDPAP35	SEQ ID NO:760		Excretory, Immune/Hematopoietic, Neural/Sensory
HDPAP35	SEQ ID NO:761		Excretory, Immune/Hematopoietic, Neural/Sensory
HDPAP35	SEQ ID NO:762		Excretory, Immune/Hematopoietic, Neural/Sensory
HDPAP35	SEQ ID NO:763		Excretory, Immune/Hematopoietic, Neural/Sensory
HDPAQ55	SEQ ID NO:764		Digestive, Immune/Hematopoietic, Reproductive
HDPAQ55	SEQ ID NO:765		Digestive, Immune/Hematopoietic, Reproductive
HDPAQ55	SEQ ID NO:766		Digestive, Immune/Hematopoietic, Reproductive
HDPAQ55	SEQ ID NO:767		Digestive, Immune/Hematopoietic, Reproductive
HKAAV61	SEQ ID NO:768		Connective/Epithelial
HKAAV61	SEQ ID NO:769		Connective/Epithelial
HKAAV61	SEQ ID NO:770		Connective/Epithelial
HDPCJ43	SEQ ID NO:771		Cancer
HDPCJ43	SEQ ID NO:772		Cancer
HDPCJ43	SEQ ID NO:773		Cancer
HDPCJ43	SEQ ID NO:774		Cancer
HKACM93	SEQ ID NO:775		Cancer
HKACM93	SEQ ID NO:776		Cancer
HKACM93	SEQ ID NO:777		Cancer
HKACM93	SEQ ID NO:778		Cancer
HKAFT66	SEQ ID NO:779		Connective/Epithelial, Digestive, Immune/Hematopoietic
HKAFT66	SEQ ID NO:780		Connective/Epithelial,

			Digestive, Immune/Hematopoietic
HKAFT66	SEQ ID NO:781		Connective/Epithelial, Digestive, Immune/Hematopoietic
HHEMM74	SEQ ID NO:782		Cancer
HHEMM74	SEQ ID NO:783		Cancer
HHEMM74	SEQ ID NO:784		Cancer
HHEMM74	SEQ ID NO:785		Cancer
HAMFC93	SEQ ID NO:786		Cancer
HAMFC93	SEQ ID NO:787		Cancer
HAMFC93	SEQ ID NO:788		Cancer
HSYAZ50	SEQ ID NO:789		Cancer
HSYAZ50	SEQ ID NO:790		Cancer
HSYAZ50	SEQ ID NO:791		Cancer
HSYAZ50	SEQ ID NO:792		Cancer
HLWAX42	SEQ ID NO:793		Cancer
HLWAX42	SEQ ID NO:794		Cancer
HLWAX42	SEQ ID NO:795		Cancer
HLWAZ70	SEQ ID NO:796		Cancer
HLWAZ70	SEQ ID NO:797		Cancer
HLWAZ70	SEQ ID NO:798		Cancer
HLWAZ70	SEQ ID NO:799		Cancer
HLWBG83	SEQ ID NO:800		Cancer
HLWBG83	SEQ ID NO:801		Cancer
HLWBG83	SEQ ID NO:802		Cancer
HLWBG83	SEQ ID NO:803		Cancer
HLWBG83	SEQ ID NO:804		Cancer
HLWBH18	SEQ ID NO:805		Reproductive
HLWBH18	SEQ ID NO:806		Reproductive
HRABS65	SEQ ID NO:807		Cancer
HRABV43	SEQ ID NO:808		Cancer
HRABV43	SEQ ID NO:809		Cancer
HRABV43	SEQ ID NO:810		Cancer
HHEPG23	SEQ ID NO:811		Cancer
HHEPG23	SEQ ID NO:812		Cancer
HHEPG23	SEQ ID NO:813		Cancer
HHEPJ23	SEQ ID NO:814		Cancer
HHEPJ23	SEQ ID NO:815		Cancer
HDPIW06	SEQ ID NO:816		Digestive, Immune/Hematopoietic, Neural/Sensory
HDPIW06	SEQ ID NO:817		Digestive, Immune/Hematopoietic, Neural/Sensory
HDPIW06	SEQ ID NO:818		Digestive, Immune/Hematopoietic, Neural/Sensory
HDPIW06	SEQ ID NO:819		Digestive, Immune/Hematopoietic, Neural/Sensory
HDPIW06	SEQ ID NO:820		Digestive, Immune/Hematopoietic, Neural/Sensory
HDPPA04	SEQ ID NO:821		Cardiovascular, Connective/Epithelial,

			Immune/Hematopoietic
HDPPA04	SEQ ID NO:822		Cardiovascular, Connective/Epithelial, Immune/Hematopoietic
HDPPA04	SEQ ID NO:823		Cardiovascular, Connective/Epithelial, Immune/Hematopoietic
HDPPN86	SEQ ID NO:824		Cancer
HDPPN86	SEQ ID NO:825		Cancer
HDTEK44	SEQ ID NO:826		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HDTEK44	SEQ ID NO:827		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HDTEK44	SEQ ID NO:828		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HDTEK44	SEQ ID NO:829		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HOHBL42	SEQ ID NO:830		Cancer
HOHBL42	SEQ ID NO:831		Cancer
HOHBL42	SEQ ID NO:832		Cancer
HOHBL42	SEQ ID NO:833		Cancer
HOHBP82	SEQ ID NO:834		Musculoskeletal
HOHBP82	SEQ ID NO:835		Musculoskeletal
HOHBP82	SEQ ID NO:836		Musculoskeletal
HOHBP82	SEQ ID NO:837		Musculoskeletal
HOHBY44	SEQ ID NO:838		Cancer
HOHBY44	SEQ ID NO:839		Cancer
HOHBY44	SEQ ID NO:840		Cancer
HWBAD01	SEQ ID NO:841		Immune/Hematopoietic
HWBAD01	SEQ ID NO:842		Immune/Hematopoietic
HWBAD01	SEQ ID NO:843		Immune/Hematopoietic
HOHCJ90	SEQ ID NO:844		Cancer
HOHCJ90	SEQ ID NO:845		Cancer
HWABE12	SEQ ID NO:846		Cancer
HWABE12	SEQ ID NO:847		Cancer
HWABE12	SEQ ID NO:848		Cancer
HWBAR14	SEQ ID NO:849		Cancer
HWBAR14	SEQ ID NO:850		Cancer
HWBAR14	SEQ ID NO:851		Cancer
HWBAR14	SEQ ID NO:852		Cancer
HWBAR88	SEQ ID NO:853		Cancer
HWBCH13	SEQ ID NO:854		Immune/Hematopoietic
HWBCH13	SEQ ID NO:855		Immune/Hematopoietic
HWBCH13	SEQ ID NO:856		Immune/Hematopoietic
HWBCH13	SEQ ID NO:857		Immune/Hematopoietic
HWBCM79	SEQ ID NO:858		Immune/Hematopoietic
HWBCV72	SEQ ID NO:859		Cancer
HWBCV72	SEQ ID NO:860		Cancer
HWBCV72	SEQ ID NO:861		Cancer
HWBCV72	SEQ ID NO:862		Cancer
HWBDM62	SEQ ID NO:863		Endocrine, Immune/Hematopoietic

HWBDM62	SEQ ID NO:864		Endocrine, Immune/Hematopoietic
HWBDM62	SEQ ID NO:865		Endocrine, Immune/Hematopoietic
HWBDM62	SEQ ID NO:866		Endocrine, Immune/Hematopoietic
HMTAL77	SEQ ID NO:867		Cancer
HMTAL77	SEQ ID NO:868		Cancer
HDPRH52	SEQ ID NO:869		Cancer
HDPRH52	SEQ ID NO:870		Cancer
HDPSB18	SEQ ID NO:871		Cancer
HDPSB18	SEQ ID NO:872		Cancer
HDPSB18	SEQ ID NO:873		Cancer
HDPSB18	SEQ ID NO:874		Cancer
HDPSH53	SEQ ID NO:875		Immune/Hematopoietic, Reproductive
HDPSH53	SEQ ID NO:876		Immune/Hematopoietic, Reproductive
HDPLO25	SEQ ID NO:877		Cancer
HDPLO25	SEQ ID NO:878		Cancer
HDPLO25	SEQ ID NO:879		Cancer
HDPRN70	SEQ ID NO:880		Immune/Hematopoietic
HDPRN70	SEQ ID NO:881		Immune/Hematopoietic
HDPTW24	SEQ ID NO:882		Immune/Hematopoietic
HDPTW65	SEQ ID NO:883		Excretory
HDPTW65	SEQ ID NO:884		Excretory
HDPTW65	SEQ ID NO:885		Excretory
HDPWN93	SEQ ID NO:886		Cancer
HDPWN93	SEQ ID NO:887		Cancer
HDPWN93	SEQ ID NO:888		Cancer
HDPXY01	SEQ ID NO:889		Cancer
HDPXY01	SEQ ID NO:890		Cancer
HDPXY01	SEQ ID NO:891		Cancer
HDPXY01	SEQ ID NO:892		Cancer
HWHPM16	SEQ ID NO:893		Cancer
HWHPM16	SEQ ID NO:894		Cancer
HLDQA07	SEQ ID NO:895		Digestive
HLDQA07	SEQ ID NO:896		Digestive
HDTFE17	SEQ ID NO:897		Cancer
HDTFE17	SEQ ID NO:898		Cancer
HDTFE17	SEQ ID NO:899		Cancer
HWDAD17	SEQ ID NO:900		Cancer
HWDAD17	SEQ ID NO:901		Cancer
HWEAC77	SEQ ID NO:902		Connective/Epithelial
HWEAC77	SEQ ID NO:903		Connective/Epithelial
HWBEM18	SEQ ID NO:904		Cancer
HWBEM18	SEQ ID NO:905		Cancer
HWBEM18	SEQ ID NO:906		Cancer
HWBFE57	SEQ ID NO:907		Cancer
HWBFE57	SEQ ID NO:908		Cancer
HWBFE57	SEQ ID NO:909		Cancer
HOHDF66	SEQ ID NO:910		Musculoskeletal
HOHDF66	SEQ ID NO:911		Musculoskeletal
HOHDF66	SEQ ID NO:912		Musculoskeletal
HOHDC86	SEQ ID NO:913		Musculoskeletal

HOHDC86	SEQ ID NO:914		Musculoskeletal
HOHDC86	SEQ ID NO:915		Musculoskeletal
HRADO01	SEQ ID NO:916		Excretory
HRADO01	SEQ ID NO:917		Excretory
HRADO01	SEQ ID NO:918		Excretory
HRAEE45	SEQ ID NO:919		Connective/Epithelial, Excretory, Immune/Hematopoietic
HRAEE45	SEQ ID NO:920		Connective/Epithelial, Excretory, Immune/Hematopoietic
HRAEE45	SEQ ID NO:921		Connective/Epithelial, Excretory, Immune/Hematopoietic
HRAEH37	SEQ ID NO:922		Cancer
HRAEH37	SEQ ID NO:923		Cancer
HRAEH37	SEQ ID NO:924		Cancer
HWDAAH38	SEQ ID NO:925		Cancer
HWDAAH38	SEQ ID NO:926		Cancer
HLWCP78	SEQ ID NO:927		Cancer
HLWCP78	SEQ ID NO:928		Cancer
HLWCP78	SEQ ID NO:929		Cancer
HLWCP78	SEQ ID NO:930		Cancer
HTJML75	SEQ ID NO:931		Cancer
HTJML75	SEQ ID NO:932		Cancer
HTJNX29	SEQ ID NO:933		Connective/Epithelial, Digestive, Immune/Hematopoietic
HTJNX29	SEQ ID NO:934		Connective/Epithelial, Digestive, Immune/Hematopoietic
HTJNX29	SEQ ID NO:935		Connective/Epithelial, Digestive, Immune/Hematopoietic
HHESQ62	SEQ ID NO:936		Immune/Hematopoietic
HHESQ62	SEQ ID NO:937		Immune/Hematopoietic
HHESQ62	SEQ ID NO:938		Immune/Hematopoietic
HHESQ62	SEQ ID NO:939		Immune/Hematopoietic
HHESQ62	SEQ ID NO:940		Immune/Hematopoietic
HDQGO29	SEQ ID NO:941		Immune/Hematopoietic
HDQGO29	SEQ ID NO:942		Immune/Hematopoietic
HDQGO29	SEQ ID NO:943		Immune/Hematopoietic
HDQGO29	SEQ ID NO:944		Immune/Hematopoietic
HDQHY04	SEQ ID NO:945		Cancer
HDQHY04	SEQ ID NO:946		Cancer
HDQHY04	SEQ ID NO:947		Cancer
HBXAB02	SEQ ID NO:948		Cancer
HBXAB02	SEQ ID NO:949		Cancer
HBXAB02	SEQ ID NO:950		Cancer
HCWAU23	SEQ ID NO:951		Immune/Hematopoietic
HCWAU23	SEQ ID NO:952		Immune/Hematopoietic
HCWAU23	SEQ ID NO:953		Immune/Hematopoietic
HBXAM53	SEQ ID NO:954		Cancer
HBXAM53	SEQ ID NO:955		Cancer
HBXAM53	SEQ ID NO:956		Cancer
HCWBP34	SEQ ID NO:957		Immune/Hematopoietic

HCWBP34	SEQ ID NO:958	Immune/Hematopoietic
HCWBP34	SEQ ID NO:959	Immune/Hematopoietic
HBXCT44	SEQ ID NO:960	Cancer
HBXCT44	SEQ ID NO:961	Cancer
HBXCT44	SEQ ID NO:962	Cancer
HBXCT44	SEQ ID NO:963	Cancer
HCWDY64	SEQ ID NO:964	Excretory, Immune/Hematopoietic
HCWDY64	SEQ ID NO:965	Excretory, Immune/Hematopoietic
HCWDY64	SEQ ID NO:966	Excretory, Immune/Hematopoietic
HCWEB58	SEQ ID NO:967	Cancer
HCWEB58	SEQ ID NO:968	Cancer
HBXED80	SEQ ID NO:969	Immune/Hematopoietic, Neural/Sensory
HBXED80	SEQ ID NO:970	Immune/Hematopoietic, Neural/Sensory
HBXED80	SEQ ID NO:971	Immune/Hematopoietic, Neural/Sensory
HBXED80	SEQ ID NO:972	Immune/Hematopoietic, Neural/Sensory
HCWFT79	SEQ ID NO:973	Immune/Hematopoietic
HCWFT79	SEQ ID NO:974	Immune/Hematopoietic
HCWFT79	SEQ ID NO:975	Immune/Hematopoietic
HCWFU77	SEQ ID NO:976	Cancer
HCWFU77	SEQ ID NO:977	Cancer
HCWFU77	SEQ ID NO:978	Cancer
HBXFZ38	SEQ ID NO:979	Cancer
HBXFZ38	SEQ ID NO:980	Cancer
HBXFZ38	SEQ ID NO:981	Cancer
HCUGC55	SEQ ID NO:982	Immune/Hematopoietic
HCUGC55	SEQ ID NO:983	Immune/Hematopoietic
HCUGC55	SEQ ID NO:984	Immune/Hematopoietic
HCWGU37	SEQ ID NO:985	Immune/Hematopoietic, Neural/Sensory, Reproductive
HCWGU37	SEQ ID NO:986	Immune/Hematopoietic, Neural/Sensory, Reproductive
HCWHV88	SEQ ID NO:987	Digestive, Immune/Hematopoietic, Reproductive
HCWHV88	SEQ ID NO:988	Digestive, Immune/Hematopoietic, Reproductive
HCWHX82	SEQ ID NO:989	Immune/Hematopoietic, Neural/Sensory
HCWHX82	SEQ ID NO:990	Immune/Hematopoietic, Neural/Sensory
HCWHX82	SEQ ID NO:991	Immune/Hematopoietic, Neural/Sensory
HCWFZ59	SEQ ID NO:992	Immune/Hematopoietic
HCWFZ59	SEQ ID NO:993	Immune/Hematopoietic
HCWFZ59	SEQ ID NO:994	Immune/Hematopoietic
HCWFZ59	SEQ ID NO:995	Immune/Hematopoietic

HBWCB95	SEQ ID NO:996		Neural/Sensory
HBWCB95	SEQ ID NO:997		Neural/Sensory
HBWCB95	SEQ ID NO:998		Neural/Sensory
HBWBR94	SEQ ID NO:999		Neural/Sensory
HBWBR94	SEQ ID NO:1000		Neural/Sensory
HBWBR94	SEQ ID NO:1001		Neural/Sensory
HBWCF75	SEQ ID NO:1002		Neural/Sensory
HBWCF75	SEQ ID NO:1003		Neural/Sensory
HBWCF75	SEQ ID NO:1004		Neural/Sensory
HBWCM83	SEQ ID NO:1005		Digestive, Immune/Hematopoietic, Neural/Sensory
HBWCM83	SEQ ID NO:1006		Digestive, Immune/Hematopoietic; Neural/Sensory
HBWCM83	SEQ ID NO:1007		Digestive, Immune/Hematopoietic, Neural/Sensory
HBWCM83	SEQ ID NO:1008		Digestive, Immune/Hematopoietic, Neural/Sensory
HRSMQ86	SEQ ID NO:1009		Cancer
HRSMQ86	SEQ ID NO:1010		Cancer
HFCAA91	SEQ ID NO:1011		Neural/Sensory
HFCAA91	SEQ ID NO:1012		Neural/Sensory
HFCAA91	SEQ ID NO:1013		Neural/Sensory
HFCAL39	SEQ ID NO:1014		Cancer
HFCAL39	SEQ ID NO:1015		Cancer
HFCAL39	SEQ ID NO:1016		Cancer
HCEBN44	SEQ ID NO:1017		Neural/Sensory
HCEBN44	SEQ ID NO:1018		Neural/Sensory
HHFCP32	SEQ ID NO:1019		Cancer
HGBAJ60	SEQ ID NO:1020		Cancer
HGBAJ60	SEQ ID NO:1021		Cancer
HHFCW75	SEQ ID NO:1022		Cardiovascular
HHFCW75	SEQ ID NO:1023		Cardiovascular
HHFCW75	SEQ ID NO:1024		Cardiovascular
HHFCZ67	SEQ ID NO:1025		Cancer
HHFCZ67	SEQ ID NO:1026		Cancer
HHFCZ67	SEQ ID NO:1027		Cancer
HHFCZ67	SEQ ID NO:1028		Cancer
HJBAR01	SEQ ID NO:1029		Cancer
HJBAR01	SEQ ID NO:1030		Cancer
HETAR42	SEQ ID NO:1031		Cancer
HETAR42	SEQ ID NO:1032		Cancer
HETAR42	SEQ ID NO:1033		Cancer
HETAR42	SEQ ID NO:1034		Cancer
HETAM53	SEQ ID NO:1035		Cancer
HETAM53	SEQ ID NO:1036		Cancer
HETAM53	SEQ ID NO:1037		Cancer
HETAM53	SEQ ID NO:1038		Cancer
HETAM53	SEQ ID NO:1039		Cancer
HTPBG16	SEQ ID NO:1040		Digestive, Immune/Hematopoietic
HTPBG16	SEQ ID NO:1041		Digestive, Immune/Hematopoietic

HTPBG16	SEQ ID NO:1042		Digestive, Immune/Hematopoietic
HJAAJ58	SEQ ID NO:1043		Immune/Hematopoietic
HJAAJ58	SEQ ID NO:1044		Immune/Hematopoietic
HJAAJ58	SEQ ID NO:1045		Immune/Hematopoietic
HJAAJ58	SEQ ID NO:1046		Immune/Hematopoietic
HSBBT12	SEQ ID NO:1047		Cancer
HSBBT12	SEQ ID NO:1048		Cancer
HSBBT12	SEQ ID NO:1049		Cancer
HE8MH77	SEQ ID NO:1050		Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HE8MH77	SEQ ID NO:1051		Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HE8MH77	SEQ ID NO:1052		Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HTEDJ85	SEQ ID NO:1053		Cancer
HTEDJ85	SEQ ID NO:1054		Cancer
HTEDJ85	SEQ ID NO:1055		Cancer
HTEDJ85	SEQ ID NO:1056		Cancer
HOVAF78	SEQ ID NO:1057		Cancer
HOVAF78	SEQ ID NO:1058		Cancer
HOVAF78	SEQ ID NO:1059		Cancer
HOVAF78	SEQ ID NO:1060		Cancer
HOVAF78	SEQ ID NO:1061		Cancer
HHGDE24	SEQ ID NO:1062		Cancer
HHGDE24	SEQ ID NO:1063		Cancer
HHGDE24	SEQ ID NO:1064		Cancer
HOUFU35	SEQ ID NO:1065		Connective/Epithelial
HOUFU35	SEQ ID NO:1066		Connective/Epithelial
HOUFU35	SEQ ID NO:1067		Connective/Epithelial
HOUFU35	SEQ ID NO:1068		Connective/Epithelial
HSIGD79	SEQ ID NO:1069		Cancer
HSIGD79	SEQ ID NO:1070		Cancer
HCQCT05	SEQ ID NO:1071		Digestive, Endocrine, Reproductive
HCQCT05	SEQ ID NO:1072		Digestive, Endocrine, Reproductive
HMVDL30	SEQ ID NO:1073		Cancer
HMVDL30	SEQ ID NO:1074		Cancer
HMVDL30	SEQ ID NO:1075		Cancer
HMVDL30	SEQ ID NO:1076		Cancer
HTGGO35	SEQ ID NO:1077		Cancer
HTGGO35	SEQ ID NO:1078		Cancer
HTGGO35	SEQ ID NO:1079		Cancer
HCLBW50	SEQ ID NO:1080		Cancer
HCLBW50	SEQ ID NO:1081		Cancer
HCLBW50	SEQ ID NO:1082		Cancer
HCLBW50	SEQ ID NO:1083		Cancer
HWLEV32	SEQ ID NO:1084		Cancer
HWLEV32	SEQ ID NO:1085		Cancer
HWLEV32	SEQ ID NO:1086		Cancer



HWLEV32	SEQ ID NO:1087	Cancer
HWLFE89	SEQ ID NO:1088	Cancer
HWLFE89	SEQ ID NO:1089	Cancer
HWLFE89	SEQ ID NO:1090	Cancer
HE8PW38	SEQ ID NO:1091	Neural/Sensory
HE8PW38	SEQ ID NO:1092	Neural/Sensory
HE8PW38	SEQ ID NO:1093	Neural/Sensory
HE9RO27	SEQ ID NO:1094	Connective/Epithelial, Mixed Fetal
HE9RO27	SEQ ID NO:1095	Connective/Epithelial, Mixed Fetal
HE9RO27	SEQ ID NO:1096	Connective/Epithelial, Mixed Fetal
HCRPV17	SEQ ID NO:1097	Cancer
HCRPV17	SEQ ID NO:1098	Cancer
HCRPV17	SEQ ID NO:1099	Cancer
HCRPV17	SEQ ID NO:1100	Cancer
HHBGF77	SEQ ID NO:1101	Cancer
HHBGF77	SEQ ID NO:1102	Cancer
HLUDB47	SEQ ID NO:1103	Cancer
HLUDB47	SEQ ID NO:1104	Cancer
HLUDB47	SEQ ID NO:1105	Cancer
HHENZ16	SEQ ID NO:1106	Cancer
HHENZ16	SEQ ID NO:1107	Cancer
HHENZ16	SEQ ID NO:1108	Cancer
HSYBZ44	SEQ ID NO:1109	Cancer
HARNB17	SEQ ID NO:1110	Cancer
HARNB17	SEQ ID NO:1111	Cancer
HARNB17	SEQ ID NO:1112	Cancer
HARNB92	SEQ ID NO:1113	Cancer
HARNB92	SEQ ID NO:1114	Cancer
HARNB92	SEQ ID NO:1115	Cancer
HAMGV47	SEQ ID NO:1116	Cancer
HAMGV47	SEQ ID NO:1117	Cancer
HAMGV47	SEQ ID NO:1118	Cancer
HDTMK50	SEQ ID NO:1119	Cancer
HDTMK50	SEQ ID NO:1120	Cancer
HDTMK50	SEQ ID NO:1121	Cancer
HARBA09	SEQ ID NO:1122	Cancer
HARBA09	SEQ ID NO:1123	Cancer
HARBA09	SEQ ID NO:1124	Cancer
HARBA09	SEQ ID NO:1125	Cancer
HE8OK73	SEQ ID NO:1126	Mixed Fetal, Neural/Sensory
HE8OK73	SEQ ID NO:1127	Mixed Fetal, Neural/Sensory
HE8OK73	SEQ ID NO:1128	Mixed Fetal, Neural/Sensory
HSDJL42	SEQ ID NO:1129	Cancer
HSDJL42	SEQ ID NO:1130	Cancer
HSDJL42	SEQ ID NO:1131	Cancer
HCE2P86	SEQ ID NO:1132	Cancer
HCE2P86	SEQ ID NO:1133	Cancer
HCE2P86	SEQ ID NO:1134	Cancer
HNGNN78	SEQ ID NO:1135	Cancer
HNGNN78	SEQ ID NO:1136	Cancer

HNGNN78	SEQ ID NO:1137	Cancer
HTLHC59	SEQ ID NO:1138	Digestive, Reproductive
HTLHC59	SEQ ID NO:1139	Digestive, Reproductive
HTLJF15	SEQ ID NO:1140	Immune/Hematopoietic, Reproductive
HTLJF15	SEQ ID NO:1141	Immune/Hematopoietic, Reproductive
HTLJF15	SEQ ID NO:1142	Immune/Hematopoietic, Reproductive
HPJCC05	SEQ ID NO:1143	Reproductive
HPJCC05	SEQ ID NO:1144	Reproductive
HPJCC05	SEQ ID NO:1145	Reproductive
HDPVW11	SEQ ID NO:1146	Cancer
HDPVW11	SEQ ID NO:1147	Cancer
HDPWP69	SEQ ID NO:1148	Cancer
HDPWP69	SEQ ID NO:1149	Cancer
HDPWP69	SEQ ID NO:1150	Cancer
HWHHD11	SEQ ID NO:1151	Cancer
HWHHD11	SEQ ID NO:1152	Cancer
HWHHD11	SEQ ID NO:1153	Cancer
HBIMT93	SEQ ID NO:1154	Cancer
HBIMT93	SEQ ID NO:1155	Cancer
HBIMT93	SEQ ID NO:1156	Cancer
HHATA33	SEQ ID NO:1157	Cancer
HHATA33	SEQ ID NO:1158	Cancer
HNTDL21	SEQ ID NO:1159	Cancer
HNTDL21	SEQ ID NO:1160	Cancer
HNTNK95	SEQ ID NO:1161	Cancer
HNTNK95	SEQ ID NO:1162	Cancer
HNTNK95	SEQ ID NO:1163	Cancer
HWEAD64	SEQ ID NO:1164	Cancer
HWEAD64	SEQ ID NO:1165	Cancer
HWLHZ28	SEQ ID NO:1166	Cancer
HWLHZ28	SEQ ID NO:1167	Cancer
HWLHZ28	SEQ ID NO:1168	Cancer
HWLHZ28	SEQ ID NO:1169	Cancer
HWLJE21	SEQ ID NO:1170	Cancer
HWLJE21	SEQ ID NO:1171	Cancer
HWLJE21	SEQ ID NO:1172	Cancer
HPASD51	SEQ ID NO:1173	Digestive, Excretory, Reproductive
HPASD51	SEQ ID NO:1174	Digestive, Excretory, Reproductive
HSICQ15	SEQ ID NO:1175	Cancer
HSICQ15	SEQ ID NO:1176	Cancer
HFEBP27	SEQ ID NO:1177	Cancer
HFEBP27	SEQ ID NO:1178	Cancer
HFEBP27	SEQ ID NO:1179	Cancer
HTOIZ28	SEQ ID NO:1180	Cancer
HTOIZ28	SEQ ID NO:1181	Cancer
HTOIZ28	SEQ ID NO:1182	Cancer
HTOIZ28	SEQ ID NO:1183	Cancer

HCE4L28	SEQ ID NO:1184		Cancer
HCE4L28	SEQ ID NO:1185		Cancer
HCE4L28	SEQ ID NO:1186		Cancer
HCE4L28	SEQ ID NO:1187		Cancer
HFVGM16	SEQ ID NO:1188		Cancer
HFVGM16	SEQ ID NO:1189		Cancer
HPMGR66	SEQ ID NO:1190		Cancer
HPMGR66	SEQ ID NO:1191		Cancer
HLYDU43	SEQ ID NO:1192		Cancer
HLYDU43	SEQ ID NO:1193		Cancer
HPJCK10	SEQ ID NO:1194		Cancer
HPJCK10	SEQ ID NO:1195		Cancer
HT5EK75	SEQ ID NO:1196		Cancer
HT5EK75	SEQ ID NO:1197		Cancer
HT5EK75	SEQ ID NO:1198		Cancer
HWLEZ82	SEQ ID NO:1199		Cancer
HWLEZ82	SEQ ID NO:1200		Cancer
HWLEZ82	SEQ ID NO:1201		Cancer
HWLEZ82	SEQ ID NO:1202		Cancer
HDRMB11	SEQ ID NO:1203		Digestive
HDRMB11	SEQ ID NO:1204		Digestive
HDRMB11	SEQ ID NO:1205		Digestive
HCRNC80	SEQ ID NO:1206		Cancer
HCRNC80	SEQ ID NO:1207		Cancer
HCRNC80	SEQ ID NO:1208		Cancer
HCRNF14	SEQ ID NO:1209		Cancer
HCRNF14	SEQ ID NO:1210		Cancer
HCRNF14	SEQ ID NO:1211		Cancer
HE9PF45	SEQ ID NO:1212		Cancer
HE9PF45	SEQ ID NO:1213		Cancer
HE9PF45	SEQ ID NO:1214		Cancer
HISEN93	SEQ ID NO:1215		Cancer
HISEN93	SEQ ID NO:1216		Cancer
HISEN93	SEQ ID NO:1217		Cancer
HODEA51	SEQ ID NO:1218		Cancer
HODEA51	SEQ ID NO:1219		Cancer
HODEA51	SEQ ID NO:1220		Cancer
HODEA51	SEQ ID NO:1221		Cancer
HUSJN32	SEQ ID NO:1222		Cancer
HUSJN32	SEQ ID NO:1223		Cancer
HUSJN32	SEQ ID NO:1224		Cancer
HNGNW50	SEQ ID NO:1225		Immune/Hematopoietic, Mixed Fetal, Reproductive
HNGNW50	SEQ ID NO:1226		Immune/Hematopoietic, Mixed Fetal, Reproductive
HNGNW50	SEQ ID NO:1227		Immune/Hematopoietic, Mixed Fetal, Reproductive
HUVFB80	SEQ ID NO:1228		Cancer
HUVFB80	SEQ ID NO:1229		Cancer
HFIDQ92	SEQ ID NO:1230		Cancer
HFIDQ92	SEQ ID NO:1231		Cancer
HFIDQ92	SEQ ID NO:1232		Cancer
HTLJC07	SEQ ID NO:1233		Immune/Hematopoietic,

			Neural/Sensory, Reproductive
HTLJC07	SEQ ID NO:1234		Immune/Hematopoietic, Neural/Sensory, Reproductive
HTLJC07	SEQ ID NO:1235		Immune/Hematopoietic, Neural/Sensory, Reproductive
HMSOW51	SEQ ID NO:1236		Cancer
HMSOW51	SEQ ID NO:1237		Cancer
HPJEZ38	SEQ ID NO:1238		Cancer
HPJEZ38	SEQ ID NO:1239		Cancer
HPJEZ38	SEQ ID NO:1240		Cancer
HTAGN51	SEQ ID NO:1241		Immune/Hematopoietic, Neural/Sensory, Reproductive
HTAGN51	SEQ ID NO:1242		Immune/Hematopoietic, Neural/Sensory, Reproductive
HHFLH45	SEQ ID NO:1243		Cardiovascular, Reproductive
HHFLH45	SEQ ID NO:1244		Cardiovascular, Reproductive
HHFLH45	SEQ ID NO:1245		Cardiovascular, Reproductive
HFKLE15	SEQ ID NO:1246		Cancer
HFKLE15	SEQ ID NO:1247		Cancer
HNSAA27	SEQ ID NO:1248		Digestive
HNSAA27	SEQ ID NO:1249		Digestive
HUVFY29	SEQ ID NO:1250		Cancer
HUVFY29	SEQ ID NO:1251		Cancer
HAVUR23	SEQ ID NO:1252		Neural/Sensory
HAVUR23	SEQ ID NO:1253		Neural/Sensory
HTPIH83	SEQ ID NO:1254		Digestive, Reproductive
HTPIH83	SEQ ID NO:1255		Digestive, Reproductive
HTPIH83	SEQ ID NO:1256		Digestive, Reproductive
HUCNC61	SEQ ID NO:1257		Cancer
HIDAF73	SEQ ID NO:1258		Cancer
HIDAF73	SEQ ID NO:1259		Cancer
HIDAF73	SEQ ID NO:1260		Cancer
HOFMA42	SEQ ID NO:1261		Reproductive
HOFMA42	SEQ ID NO:1262		Reproductive
HKABW11	SEQ ID NO:1263		Cancer
HKABW11	SEQ ID NO:1264		Cancer
HWBAO29	SEQ ID NO:1265		Immune/Hematopoietic, Reproductive
HWBAO29	SEQ ID NO:1266		Immune/Hematopoietic, Reproductive
HWBAO29	SEQ ID NO:1267		Immune/Hematopoietic, Reproductive
HDPTM61	SEQ ID NO:1268		Digestive, Immune/Hematopoietic
HDPTM61	SEQ ID NO:1269		Digestive,

			Immune/Hematopoietic
HKAHL26	SEQ ID NO:1270		Cancer
HKAHL26	SEQ ID NO:1271		Cancer
HDQHC29	SEQ ID NO:1272		Cancer
HDQH91	SEQ ID NO:1273		Cancer
HDQH91	SEQ ID NO:1274		Cancer
HDQH91	SEQ ID NO:1275		Cancer
HDTLR06	SEQ ID NO:1276		Cancer
HDTLR06	SEQ ID NO:1277		Cancer
HNTDE84	SEQ ID NO:1278		Cancer
HNTDE84	SEQ ID NO:1279		Cancer
HWAFT87	SEQ ID NO:1280		Cardiovascular, Immune/Hematopoietic
HWAFT87	SEQ ID NO:1281		Cardiovascular, Immune/Hematopoietic
HWAFT87	SEQ ID NO:1282		Cardiovascular, Immune/Hematopoietic
HOGCE48	SEQ ID NO:1283		Cancer
HOGCE48	SEQ ID NO:1284		Cancer
HBINS58	SEQ ID NO:1285		Connective/Epithelial, Reproductive
HBINS58	SEQ ID NO:1286		Connective/Epithelial, Reproductive
HHAUQ28	SEQ ID NO:1287		Cancer
HHAUQ28	SEQ ID NO:1288		Cancer
HBIOH81	SEQ ID NO:1289		Cancer
HBIOH81	SEQ ID NO:1290		Cancer
HOGDP46	SEQ ID NO:1291		Cancer
HOGDP46	SEQ ID NO:1292		Cancer
HWHIH10	SEQ ID NO:1293		Cancer
HWHIH10	SEQ ID NO:1294		Cancer
HCWCT62	SEQ ID NO:1295		Immune/Hematopoietic
HCWCT62	SEQ ID NO:1296		Immune/Hematopoietic
HCWCT62	SEQ ID NO:1297		Immune/Hematopoietic
HBXCL50	SEQ ID NO:1298		Digestive, Excretory, Neural/Sensory
HBXCL50	SEQ ID NO:1299		Digestive, Excretory, Neural/Sensory
HACAA29	SEQ ID NO:1300		Cancer
HACAA29	SEQ ID NO:1301		Cancer
HAJAR23	SEQ ID NO:1302		Cancer
HAJAR23	SEQ ID NO:1303		Cancer
HAJAR23	SEQ ID NO:1304		Cancer
HDPQN12	SEQ ID NO:1305		Cancer
HDPQN12	SEQ ID NO:1306		Cancer
HDQFN31	SEQ ID NO:1307		Cancer
HDQFN31	SEQ ID NO:1308		Cancer
HDQIH54	SEQ ID NO:1309		Immune/Hematopoietic
HDQIH54	SEQ ID NO:1310		Immune/Hematopoietic
HETKL27	SEQ ID NO:1311		Cancer
HETKL27	SEQ ID NO:1312		Cancer
HETKL27	SEQ ID NO:1313		Cancer
HETKL27	SEQ ID NO:1314		Cancer
HFIHQ89	SEQ ID NO:1315		Cancer

HFIHQ89	SEQ ID NO:1316	Cancer
HFKHW50	SEQ ID NO:1317	Cancer
HFKHW50	SEQ ID NO:1318	Cancer
HFKHW50	SEQ ID NO:1319	Cancer
HMEJL08	SEQ ID NO:1320	Cancer
HMEJL08	SEQ ID NO:1321	Cancer
HMEJL08	SEQ ID NO:1322	Cancer
HMSCT72	SEQ ID NO:1323	Connective/Epithelial, Immune/Hematopoietic
HMSCT72	SEQ ID NO:1324	Connective/Epithelial, Immune/Hematopoietic
HMSCT72	SEQ ID NO:1325	Connective/Epithelial, Immune/Hematopoietic
HPJEX20	SEQ ID NO:1326	Immune/Hematopoietic, Reproductive
HPJEX20	SEQ ID NO:1327	Immune/Hematopoietic, Reproductive
HPJEX20	SEQ ID NO:1328	Immune/Hematopoietic, Reproductive
HPJEX20	SEQ ID NO:1329	Immune/Hematopoietic, Reproductive
HSLGM21	SEQ ID NO:1330	Cancer
HSLGM21	SEQ ID NO:1331	Cancer
HSLHI86	SEQ ID NO:1332	Cancer
HSLHI86	SEQ ID NO:1333	Cancer
HSLHI86	SEQ ID NO:1334	Cancer
HSLHI86	SEQ ID NO:1335	Cancer
HUCNP80	SEQ ID NO:1336	Cancer
HUCNP80	SEQ ID NO:1337	Cancer
HBINK72	SEQ ID NO:1338	Cancer
HBINK72	SEQ ID NO:1339	Cancer
HBINK72	SEQ ID NO:1340	Cancer
HIABC55	SEQ ID NO:1341	Cancer
HIABC55	SEQ ID NO:1342	Cancer
HIABC55	SEQ ID NO:1343	Cancer
HIABC55	SEQ ID NO:1344	Cancer
HGBAR55	SEQ ID NO:1345	Cancer
HGBAR55	SEQ ID NO:1346	Cancer
HGBAR55	SEQ ID NO:1347	Cancer
HE2FE45	SEQ ID NO:1348	Cancer
HE2FE45	SEQ ID NO:1349	Cancer
HE2FE45	SEQ ID NO:1350	Cancer
HMRAD54	SEQ ID NO:1351	Cancer
HMRAD54	SEQ ID NO:1352	Cancer
HMRAD54	SEQ ID NO:1353	Cancer
HCEFB80	SEQ ID NO:1354	Cancer
HCEFB80	SEQ ID NO:1355	Cancer
HFTBN23	SEQ ID NO:1356	Cancer
HFTBN23	SEQ ID NO:1357	Cancer
HFTBN23	SEQ ID NO:1358	Cancer
HFTBQ52	SEQ ID NO:1359	Cancer
HFTBQ52	SEQ ID NO:1360	Cancer
HMEEJ79	SEQ ID NO:1361	Cardiovascular, Neural/Sensory, Reproductive
HMEEJ79	SEQ ID NO:1362	Cardiovascular,

			Neural/Sensory, Reproductive
HROAJ39	SEQ ID NO:1363		Cancer
HROAJ39	SEQ ID NO:1364		Cancer
HROAJ39	SEQ ID NO:1365		Cancer
HFEBV76	SEQ ID NO:1366		Cancer
HFEBV76	SEQ ID NO:1367		Cancer
HTADC09	SEQ ID NO:1368		Cancer
HTADC09	SEQ ID NO:1369		Cancer
HFXBJ12	SEQ ID NO:1370		Neural/Sensory
HFXBJ12	SEQ ID NO:1371		Neural/Sensory
HFXBJ12	SEQ ID NO:1372		Neural/Sensory
HMHBN86	SEQ ID NO:1373		Cancer
HMHBN86	SEQ ID NO:1374		Cancer
HMHBN86	SEQ ID NO:1375		Cancer
HFKFL92	SEQ ID NO:1376		Cancer
HFKFL92	SEQ ID NO:1377		Cancer
HFKFL92	SEQ ID NO:1378		Cancer
HASAW52	SEQ ID NO:1379		Cancer
HTLDT76	SEQ ID NO:1380		Cardiovascular, Neural/Sensory, Reproductive
HTLDT76	SEQ ID NO:1381		Cardiovascular, Neural/Sensory, Reproductive
HTLDT76	SEQ ID NO:1382		Cardiovascular, Neural/Sensory, Reproductive
HTLEC34	SEQ ID NO:1383		Immune/Hematopoietic, Neural/Sensory, Reproductive
HTLEC34	SEQ ID NO:1384		Immune/Hematopoietic, Neural/Sensory, Reproductive
HNHFB60	SEQ ID NO:1385		Immune/Hematopoietic
HNHFB60	SEQ ID NO:1386		Immune/Hematopoietic
HNHFB60	SEQ ID NO:1387		Immune/Hematopoietic
H2CBK33	SEQ ID NO:1388		Cancer
H2CBK33	SEQ ID NO:1389		Cancer
H2CBK33	SEQ ID NO:1390		Cancer
HNGEY29	SEQ ID NO:1391		Cancer
HNGEY29	SEQ ID NO:1392		Cancer
HUSFE58	SEQ ID NO:1393		Cancer
HUSFE58	SEQ ID NO:1394		Cancer
HMSHS36	SEQ ID NO:1395		Immune/Hematopoietic
HMSHS36	SEQ ID NO:1396		Immune/Hematopoietic
HMSKC10	SEQ ID NO:1397		Immune/Hematopoietic
HMSKC10	SEQ ID NO:1398		Immune/Hematopoietic
HMSKC10	SEQ ID NO:1399		Immune/Hematopoietic
HSLGU75	SEQ ID NO:1400		Cancer
HSLGU75	SEQ ID NO:1401		Cancer
HSLGU75	SEQ ID NO:1402		Cancer
HDABU01	SEQ ID NO:1403		Cancer
HDABU01	SEQ ID NO:1404		Cancer
HDABU01	SEQ ID NO:1405		Cancer
HADGD17	SEQ ID NO:1406		Connective/Epithelial

HADGD17	SEQ ID NO:1407		Connective/Epithelial
HADGD17	SEQ ID NO:1408		Connective/Epithelial
HFIUE67	SEQ ID NO:1409		Cancer
HKGAM29	SEQ ID NO:1410		Cancer
HACBD86	SEQ ID NO:1411		Cancer
HACBD86	SEQ ID NO:1412		Cancer
HACBD86	SEQ ID NO:1413		Cancer
HEGAK23	SEQ ID NO:1414		Cancer
HEGAK23	SEQ ID NO:1415		Cancer
HEGAK23	SEQ ID NO:1416		Cancer
HEGAK23	SEQ ID NO:1417		Cancer
HCHAR90	SEQ ID NO:1418		Cancer
HCHAR90	SEQ ID NO:1419		Cancer
HCHAR90	SEQ ID NO:1420		Cancer
HLYCK27	SEQ ID NO:1421		Immune/Hematopoietic
HMVBP38	SEQ ID NO:1422		Cancer
HMVBP38	SEQ ID NO:1423		Cancer
HMVBP38	SEQ ID NO:1424		Cancer
HFACI31	SEQ ID NO:1425		Neural/Sensory
HFACI31	SEQ ID NO:1426		Neural/Sensory
HFACI31	SEQ ID NO:1427		Neural/Sensory
HBJKC04	SEQ ID NO:1428		Immune/Hematopoietic
HBJKC04	SEQ ID NO:1429		Immune/Hematopoietic
HBJKC04	SEQ ID NO:1430		Immune/Hematopoietic
HBJIT60	SEQ ID NO:1431		Immune/Hematopoietic
HBJIT60	SEQ ID NO:1432		Immune/Hematopoietic
HBJIT60	SEQ ID NO:1433		Immune/Hematopoietic
HPJBK03	SEQ ID NO:1434		Cancer
HPJBK03	SEQ ID NO:1435		Cancer
HPJCL22	SEQ ID NO:1436		Cancer
HPJCL22	SEQ ID NO:1437		Cancer
HPJCL22	SEQ ID NO:1438		Cancer
HTWJB71	SEQ ID NO:1439		Immune/Hematopoietic, Neural/Sensory
HNTOE45	SEQ ID NO:1440		Cancer
HNTOE45	SEQ ID NO:1441		Cancer
HNTRW30	SEQ ID NO:1442		Digestive, Immune/Hematopoietic, Mixed Fetal
HNTRW30	SEQ ID NO:1443		Digestive, Immune/Hematopoietic, Mixed Fetal
HCHPU32	SEQ ID NO:1444		Cancer
HCHPU32	SEQ ID NO:1445		Cancer
HCHPU32	SEQ ID NO:1446		Cancer
HGCNC48	SEQ ID NO:1447		Reproductive
HGCNC48	SEQ ID NO:1448		Reproductive
HLTHO84	SEQ ID NO:1449		Cancer
HSLIA81	SEQ ID NO:1450		Cancer
HSLIA81	SEQ ID NO:1451		Cancer
HSLIA81	SEQ ID NO:1452		Cancer
HSLIA81	SEQ ID NO:1453		Cancer
HBFMA07	SEQ ID NO:1454		Cancer
HBODE48	SEQ ID NO:1455		Digestive, Excretory, Immune/Hematopoietic



HBODE48	SEQ ID NO:1456		Digestive, Excretory, Immune/Hematopoietic
HBODE48	SEQ ID NO:1457		Digestive, Excretory, Immune/Hematopoietic
HBODE48	SEQ ID NO:1458		Digestive, Excretory, Immune/Hematopoietic
HCRME12	SEQ ID NO:1459		Cancer
HCRME12	SEQ ID NO:1460		Cancer
HBODQ16	SEQ ID NO:1461		Cancer
HBODQ16	SEQ ID NO:1462		Cancer
HASMB80	SEQ ID NO:1463		Cancer
HASMB80	SEQ ID NO:1464		Cancer
HBOEG11	SEQ ID NO:1465		Cancer
HBOEG11	SEQ ID NO:1466		Cancer
HCRNU76	SEQ ID NO:1467		Cancer
HCRNU76	SEQ ID NO:1468		Cancer
HAPSQ21	SEQ ID NO:1469		Reproductive, Respiratory
HAPSQ21	SEQ ID NO:1470		Reproductive, Respiratory
HAPSQ21	SEQ ID NO:1471		Reproductive, Respiratory
HWLNF33	SEQ ID NO:1472		Cancer
HWLNF33	SEQ ID NO:1473		Cancer
HE8QO53	SEQ ID NO:1474		Cancer
HE8QO53	SEQ ID NO:1475		Cancer
HE8QV67	SEQ ID NO:1476		Cancer
HE8QV67	SEQ ID NO:1477		Cancer
HE8TB68	SEQ ID NO:1478		Cancer
HE8TY90	SEQ ID NO:1479		Cancer
HE8TY90	SEQ ID NO:1480		Cancer
HE8TY90	SEQ ID NO:1481		Cancer
HE8TY90	SEQ ID NO:1482		Cancer
HETLM70	SEQ ID NO:1483		Digestive, Excretory, Reproductive
HETLM70	SEQ ID NO:1484		Digestive, Excretory, Reproductive
HETLM70	SEQ ID NO:1485		Digestive, Excretory, Reproductive
HISES66	SEQ ID NO:1486		Digestive, Reproductive
HISES66	SEQ ID NO:1487		Digestive, Reproductive
HISES66	SEQ ID NO:1488		Digestive, Reproductive
HTXKV29	SEQ ID NO:1489		Cancer
HTXKV29	SEQ ID NO:1490		Cancer
HTXKV29	SEQ ID NO:1491		Cancer
HTXLH48	SEQ ID NO:1492		Immune/Hematopoietic
HTXLH48	SEQ ID NO:1493		Immune/Hematopoietic

HTXLH48	SEQ ID NO:1494		Immune/Hematopoietic
HTEMD27	SEQ ID NO:1495		Cancer
HTEMD27	SEQ ID NO:1496		Cancer
HTEME02	SEQ ID NO:1497		Cancer
HTEME02	SEQ ID NO:1498		Cancer
HTEME02	SEQ ID NO:1499		Cancer
HNHLD23	SEQ ID NO:1500		Immune/Hematopoietic
HETLT82	SEQ ID NO:1501		Immune/Hematopoietic, Reproductive
HETLT82	SEQ ID NO:1502		Immune/Hematopoietic, Reproductive
HETLT82	SEQ ID NO:1503		Immune/Hematopoietic, Reproductive
HNGLH60	SEQ ID NO:1504		Immune/Hematopoietic, Musculoskeletal
HNGLH60	SEQ ID NO:1505		Immune/Hematopoietic, Musculoskeletal
HNGLH60	SEQ ID NO:1506		Immune/Hematopoietic, Musculoskeletal
HNHPG05	SEQ ID NO:1507		Immune/Hematopoietic
HNHPG05	SEQ ID NO:1508		Immune/Hematopoietic
HNHPG05	SEQ ID NO:1509		Immune/Hematopoietic
HUSIY89	SEQ ID NO:1510		Cardiovascular, Immune/Hematopoietic
HUSIY89	SEQ ID NO:1511		Cardiovascular, Immune/Hematopoietic
HUSJM25	SEQ ID NO:1512		Cancer
HUSJM25	SEQ ID NO:1513		Cancer
HTXNL31	SEQ ID NO:1514		Digestive, Immune/Hematopoietic, Reproductive
HTXNL31	SEQ ID NO:1515		Digestive, Immune/Hematopoietic, Reproductive
HBGNQ12	SEQ ID NO:1516		Cancer
HBGNQ12	SEQ ID NO:1517		Cancer
HNGNS74	SEQ ID NO:1518		Cancer
HNGNS74	SEQ ID NO:1519		Cancer
HNGOD80	SEQ ID NO:1520		Cancer
HNGOD80	SEQ ID NO:1521		Cancer
HODHK19	SEQ ID NO:1522		Reproductive
HODHK19	SEQ ID NO:1523		Reproductive
HODHK19	SEQ ID NO:1524		Reproductive
HTLHR26	SEQ ID NO:1525		Immune/Hematopoietic, Reproductive
HTLHR26	SEQ ID NO:1526		Immune/Hematopoietic, Reproductive
HTLHR26	SEQ ID NO:1527		Immune/Hematopoietic, Reproductive
HUSZS75	SEQ ID NO:1528		Cancer
HUSZS75	SEQ ID NO:1529		Cancer
HLQDY81	SEQ ID NO:1530		Cardiovascular, Digestive, Musculoskeletal
HBGNU56	SEQ ID NO:1531		Cancer
HBGNU56	SEQ ID NO:1532		Cancer

HODGL52	SEQ ID NO:1533		Cancer
HODGL52	SEQ ID NO:1534		Cancer
HTXNV67	SEQ ID NO:1535		Cancer
HTXNV67	SEQ ID NO:1536		Cancer
HTXNV67	SEQ ID NO:1537		Cancer
HOCNE30	SEQ ID NO:1538		Digestive, Musculoskeletal, Neural/Sensory
HOCNE30	SEQ ID NO:1539		Digestive, Musculoskeletal, Neural/Sensory
HOCNE30	SEQ ID NO:1540		Digestive, Musculoskeletal, Neural/Sensory
HMSOC30	SEQ ID NO:1541		Cancer
HMSOC30	SEQ ID NO:1542		Cancer
HWMAF61	SEQ ID NO:1543		Digestive
HWMAF61	SEQ ID NO:1544		Digestive
HWMAF61	SEQ ID NO:1545		Digestive
HWMAF61	SEQ ID NO:1546		Digestive
HWMAF61	SEQ ID NO:1547		Digestive
HWMH36	SEQ ID NO:1548		Immune/Hematopoietic
HWMH36	SEQ ID NO:1549		Immune/Hematopoietic
HXOAC69	SEQ ID NO:1550		Cancer
HXOAC69	SEQ ID NO:1551		Cancer
HPJDA23	SEQ ID NO:1552		Mixed Fetal, Neural/Sensory, Reproductive
HPJDA23	SEQ ID NO:1553		Mixed Fetal, Neural/Sensory, Reproductive
HPJEE14	SEQ ID NO:1554		Reproductive
HPJEE14	SEQ ID NO:1555		Reproductive
HPJEG57	SEQ ID NO:1556		Reproductive
HPJEG57	SEQ ID NO:1557		Reproductive
HPJEG57	SEQ ID NO:1558		Reproductive
HPJEV11	SEQ ID NO:1559		Cancer
HTTKT43	SEQ ID NO:1560		Cancer
HTTKT43	SEQ ID NO:1561		Cancer
HTTKT43	SEQ ID NO:1562		Cancer
HHFKM76	SEQ ID NO:1563		Cancer
HHFKM76	SEQ ID NO:1564		Cancer
HHFKM76	SEQ ID NO:1565		Cancer
HHFML08	SEQ ID NO:1566		Cardiovascular, Immune/Hematopoietic, Mixed Fetal
HHFML08	SEQ ID NO:1567		Cardiovascular, Immune/Hematopoietic, Mixed Fetal
HHFML08	SEQ ID NO:1568		Cardiovascular, Immune/Hematopoietic, Mixed Fetal
HTPFX69	SEQ ID NO:1569		Cancer
HTPFX69	SEQ ID NO:1570		Cancer
HTPFX69	SEQ ID NO:1571		Cancer
HTPFX69	SEQ ID NO:1572		Cancer

HFKLX38	SEQ ID NO:1573		Excretory, Respiratory
HFKLX38	SEQ ID NO:1574		Excretory, Respiratory
HFKLX38	SEQ ID NO:1575		Excretory, Respiratory
HFKME15	SEQ ID NO:1576		Excretory
HFKME15	SEQ ID NO:1577		Excretory
HUVFH14	SEQ ID NO:1578		Cancer
HUVFH14	SEQ ID NO:1579		Cancer
HUVFH14	SEQ ID NO:1580		Cancer
HE2KK74	SEQ ID NO:1581		Cancer
HE2KK74	SEQ ID NO:1582		Cancer
HE2KK74	SEQ ID NO:1583		Cancer
HMALI42	SEQ ID NO:1584		Immune/Hematopoietic
HE2LW65	SEQ ID NO:1585		Cancer
HE2LW65	SEQ ID NO:1586		Cancer
HE2LW65	SEQ ID NO:1587		Cancer
HTFOS57	SEQ ID NO:1588		Cancer
HTFOS57	SEQ ID NO:1589		Cancer
HTFOS57	SEQ ID NO:1590		Cancer
HUVHI35	SEQ ID NO:1591		Cancer
HUVHI35	SEQ ID NO:1592		Cancer
HUVHI35	SEQ ID NO:1593		Cancer
HUVHI35	SEQ ID NO:1594		Cancer
HTPHS66	SEQ ID NO:1595		Cancer
HTPHS66	SEQ ID NO:1596		Cancer
HTPHS66	SEQ ID NO:1597		Cancer
HHFOJ29	SEQ ID NO:1598		Cancer
HHFOJ29	SEQ ID NO:1599		Cancer
HHFOJ29	SEQ ID NO:1600		Cancer
HMAMI15	SEQ ID NO:1601		Cancer
HTXQM57	SEQ ID NO:1602		Immune/Hematopoietic, Mixed Fetal
HE2RO22	SEQ ID NO:1603		Mixed Fetal
HE2RO22	SEQ ID NO:1604		Mixed Fetal
HE2SI26	SEQ ID NO:1605		Cancer
HTXRE15	SEQ ID NO:1606		Cancer
HTXRE15	SEQ ID NO:1607		Cancer
HUCPD31	SEQ ID NO:1608		Cancer
HUCPD31	SEQ ID NO:1609		Cancer
HFPFA80	SEQ ID NO:1610		Neural/Sensory
HFPFA80	SEQ ID NO:1611		Neural/Sensory
HFPFA80	SEQ ID NO:1612		Neural/Sensory
HFPFA80	SEQ ID NO:1613		Neural/Sensory
HFPHB92	SEQ ID NO:1614		Excretory, Neural/Sensory
HFPHS77	SEQ ID NO:1615		Cancer
HFPHS77	SEQ ID NO:1616		Cancer
HFPHS77	SEQ ID NO:1617		Cancer
HIPAJ43	SEQ ID NO:1618		Cancer
HIPAJ43	SEQ ID NO:1619		Cancer
HDDMW90	SEQ ID NO:1620		Cancer
HDDMW90	SEQ ID NO:1621		Cancer
HBCPB32	SEQ ID NO:1622		Neural/Sensory, Reproductive

HFVVC95	SEQ ID NO:1623	Cancer
HFVVC95	SEQ ID NO:1624	Cancer
HFVVC95	SEQ ID NO:1625	Cancer
HCOMM91	SEQ ID NO:1626	Cancer
HCOMM91	SEQ ID NO:1627	Cancer
HVVAM64	SEQ ID NO:1628	Cancer
HVVAM64	SEQ ID NO:1629	Cancer
HVVAM64	SEQ ID NO:1630	Cancer
HNBUC50	SEQ ID NO:1631	Cancer
HNBUC50	SEQ ID NO:1632	Cancer
HNBUC50	SEQ ID NO:1633	Cancer
HNBUC50	SEQ ID NO:1634	Cancer
HUUDF48	SEQ ID NO:1635	Immune/Hematopoietic
HUUDF48	SEQ ID NO:1636	Immune/Hematopoietic
HBCQL32	SEQ ID NO:1637	Cancer
HBCQL32	SEQ ID NO:1638	Cancer
HCBND16	SEQ ID NO:1639	Cancer
HCBND16	SEQ ID NO:1640	Cancer
HNNBM45	SEQ ID NO:1641	Immune/Hematopoietic, Reproductive
HNNBM45	SEQ ID NO:1642	Immune/Hematopoietic, Reproductive
HWMGN33	SEQ ID NO:1643	Digestive
HWMGN33	SEQ ID NO:1644	Digestive
HWMLN52	SEQ ID NO:1645	Digestive, Immune/Hematopoietic
HWMLN52	SEQ ID NO:1646	Digestive, Immune/Hematopoietic
HWMLN52	SEQ ID NO:1647	Digestive, Immune/Hematopoietic
HVARW53	SEQ ID NO:1648	Digestive
HVARW53	SEQ ID NO:1649	Digestive
HAHFU44	SEQ ID NO:1650	Cardiovascular, Digestive, Musculoskeletal
HAHFU44	SEQ ID NO:1651	Cardiovascular, Digestive, Musculoskeletal
HAHFU44	SEQ ID NO:1652	Cardiovascular, Digestive, Musculoskeletal
HCOOS80	SEQ ID NO:1653	Cancer
HCOOS80	SEQ ID NO:1654	Cancer
HCOOS80	SEQ ID NO:1655	Cancer
HNKCO80	SEQ ID NO:1656	Cancer
HNKCO80	SEQ ID NO:1657	Cancer
HLTIP27	SEQ ID NO:1658	Immune/Hematopoietic
HLTIP27	SEQ ID NO:1659	Immune/Hematopoietic
HLTIP94	SEQ ID NO:1660	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HLTIP94	SEQ ID NO:1661	Immune/Hematopoietic, Mixed Fetal, Neural/Sensory
HLTIP94	SEQ ID NO:1662	Immune/Hematopoietic, Mixed Fetal,

			Neural/Sensory
HOCPM23	SEQ ID NO:1663		Reproductive
HOCPM23	SEQ ID NO:1664		Reproductive
HPDWP28	SEQ ID NO:1665		Reproductive
HPDWP28	SEQ ID NO:1666		Reproductive
HLCND09	SEQ ID NO:1667		Cancer
HLCND09	SEQ ID NO:1668		Cancer
HEEBI05	SEQ ID NO:1669		Digestive, Reproductive
HEEBB55	SEQ ID NO:1670		Cancer
HEEBB55	SEQ ID NO:1671		Cancer
HEEBB55	SEQ ID NO:1672		Cancer
HEGCL11	SEQ ID NO:1673		Cancer
HEGCL11	SEQ ID NO:1674		Cancer
HNTPB82	SEQ ID NO:1675		Cancer
HNTPB82	SEQ ID NO:1676		Cancer
HOFMM69	SEQ ID NO:1677		Reproductive
HOFMM69	SEQ ID NO:1678		Reproductive
HLDAB75	SEQ ID NO:1679		Cancer
HLDAB75	SEQ ID NO:1680		Cancer
HKACC80	SEQ ID NO:1681		Cancer
HKACC80	SEQ ID NO:1682		Cancer
HKACC80	SEQ ID NO:1683		Cancer
HKAEL28	SEQ ID NO:1684		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HKAEL28	SEQ ID NO:1685		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HDPGT25	SEQ ID NO:1686		Cancer
HDPGT25	SEQ ID NO:1687		Cancer
HLWBT09	SEQ ID NO:1688		Excretory, Reproductive
HLWBT09	SEQ ID NO:1689		Excretory, Reproductive
HHEDN80	SEQ ID NO:1690		Cancer
HHEDN80	SEQ ID NO:1691		Cancer
HHEDN80	SEQ ID NO:1692		Cancer
HDFQB14	SEQ ID NO:1693		Immune/Hematopoietic, Neural/Sensory, Reproductive
HWAAW33	SEQ ID NO:1694		Cardiovascular, Immune/Hematopoietic, Musculoskeletal
HWAAW33	SEQ ID NO:1695		Cardiovascular, Immune/Hematopoietic, Musculoskeletal
HWABF47	SEQ ID NO:1696		Cancer
HWABF47	SEQ ID NO:1697		Cancer
HWABI12	SEQ ID NO:1698		Immune/Hematopoietic
HWABI12	SEQ ID NO:1699		Immune/Hematopoietic
HWBBT49	SEQ ID NO:1700		Cancer
HWBBT49	SEQ ID NO:1701		Cancer
HWBBT49	SEQ ID NO:1702		Cancer
HAMGG89	SEQ ID NO:1703		Immune/Hematopoietic, Neural/Sensory,

HAMGG89	SEQ ID NO:1704		Reproductive
			Immune/Hematopoietic, Neural/Sensory, Reproductive
HAJBW16	SEQ ID NO:1705		Neural/Sensory
HAJBW16	SEQ ID NO:1706		Neural/Sensory
HNTAI35	SEQ ID NO:1707		Cancer
HNTAI35	SEQ ID NO:1708		Cancer
HNTAI35	SEQ ID NO:1709		Cancer
HNTAI35	SEQ ID NO:1710		Cancer
HNTAI35	SEQ ID NO:1711		Cancer
HNTBN41	SEQ ID NO:1712		Immune/Hematopoietic
HNTBN41	SEQ ID NO:1713		Immune/Hematopoietic
HNTBN41	SEQ ID NO:1714		Immune/Hematopoietic
HNTBN41	SEQ ID NO:1715		Immune/Hematopoietic
HDPRJ60	SEQ ID NO:1716		Cancer
HDPRJ60	SEQ ID NO:1717		Cancer
HDPRJ60	SEQ ID NO:1718		Cancer
HDPSB01	SEQ ID NO:1719		Cancer
HDPSB01	SEQ ID NO:1720		Cancer
HDPSB01	SEQ ID NO:1721		Cancer
HDPSB01	SEQ ID NO:1722		Cancer
HDPSB01	SEQ ID NO:1723		Cancer
HDPTC31	SEQ ID NO:1724		Immune/Hematopoietic
HDPTC31	SEQ ID NO:1725		Immune/Hematopoietic
HDPTC31	SEQ ID NO:1726		Immune/Hematopoietic
HDPXL05	SEQ ID NO:1727		Immune/Hematopoietic, Reproductive
HDPXL05	SEQ ID NO:1728		Immune/Hematopoietic, Reproductive
HDPXL05	SEQ ID NO:1729		Immune/Hematopoietic, Reproductive
HDPXY88	SEQ ID NO:1730		Cancer
HDPXY88	SEQ ID NO:1731		Cancer
HDPXY88	SEQ ID NO:1732		Cancer
HLDQZ72	SEQ ID NO:1733		Cancer
HLDQZ72	SEQ ID NO:1734		Cancer
HLDQZ72	SEQ ID NO:1735		Cancer
HWBEV57	SEQ ID NO:1736		Immune/Hematopoietic
HWBEV57	SEQ ID NO:1737		Immune/Hematopoietic
HWBEV57	SEQ ID NO:1738		Immune/Hematopoietic
HAMHH20	SEQ ID NO:1739		Cancer
HAMHH20	SEQ ID NO:1740		Cancer
HDLAY18	SEQ ID NO:1741		Cancer
HDLAY18	SEQ ID NO:1742		Cancer
HKAHN23	SEQ ID NO:1743		Connective/Epithelial, Digestive, Mixed Fetal
HKAHN23	SEQ ID NO:1744		Connective/Epithelial, Digestive, Mixed Fetal
HKAJW28	SEQ ID NO:1745		Cancer
HKAJW28	SEQ ID NO:1746		Cancer
HDQFU73	SEQ ID NO:1747		Digestive, Immune/Hematopoietic
HDQFU73	SEQ ID NO:1748		Digestive,

HDQFU73	SEQ ID NO:1749		Immune/Hematopoietic
			Digestive, Immune/Hematopoietic
HDTKS69	SEQ ID NO:1750		Cancer
HSYDT06	SEQ ID NO:1751		Cancer
HSYDT06	SEQ ID NO:1752		Cancer
HSYDT06	SEQ ID NO:1753		Cancer
HSYDT06	SEQ ID NO:1754		Cancer
HNTEF28	SEQ ID NO:1755		Cancer
HNTEF28	SEQ ID NO:1756		Cancer
HNTEF53	SEQ ID NO:1757		Cancer
HNTEF53	SEQ ID NO:1758		Cancer
HNTEF53	SEQ ID NO:1759		Cancer
HNTEF53	SEQ ID NO:1760		Cancer
HDQFN60	SEQ ID NO:1761		Cancer
HDQFN60	SEQ ID NO:1762		Cancer
HHEXM06	SEQ ID NO:1763		Immune/Hematopoietic
HHEXM06	SEQ ID NO:1764		Immune/Hematopoietic
HBINU36	SEQ ID NO:1765		Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HBINU36	SEQ ID NO:1766		Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HBINU36	SEQ ID NO:1767		Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HUJCQ39	SEQ ID NO:1768		Cancer
HUJCQ39	SEQ ID NO:1769		Cancer
HUJCQ39	SEQ ID NO:1770		Cancer
HCCCG83	SEQ ID NO:1771		Cancer
HCCCG83	SEQ ID NO:1772		Cancer
HCCCG83	SEQ ID NO:1773		Cancer
HWHIM26	SEQ ID NO:1774		Connective/Epithelial, Immune/Hematopoietic
HWHIM26	SEQ ID NO:1775		Connective/Epithelial, Immune/Hematopoietic
HWHKC09	SEQ ID NO:1776		Cancer
HWHKC09	SEQ ID NO:1777		Cancer
HWHKC09	SEQ ID NO:1778		Cancer
HWHKC09	SEQ ID NO:1779		Cancer
HWHKR51	SEQ ID NO:1780		Cancer
HWHKR51	SEQ ID NO:1781		Cancer
HWHKR51	SEQ ID NO:1782		Cancer
HWHRL06	SEQ ID NO:1783		Cancer
HWHRL06	SEQ ID NO:1784		Cancer
HAZAD32	SEQ ID NO:1785		Cancer
HAZAD32	SEQ ID NO:1786		Cancer
HPAMY60	SEQ ID NO:1787		Excretory
HPAMY60	SEQ ID NO:1788		Excretory
HAOTS04	SEQ ID NO:1789		Reproductive
HAOTS04	SEQ ID NO:1790		Reproductive
HAZAP37	SEQ ID NO:1791		Reproductive
HKZAS29	SEQ ID NO:1792		Cancer
HKZAS29	SEQ ID NO:1793		Cancer
HOVJP29	SEQ ID NO:1794		Reproductive



HOVJP29	SEQ ID NO:1795	Reproductive
HWHBSB53	SEQ ID NO:1796	Cancer
HWHBSB53	SEQ ID NO:1797	Cancer
HKZBS01	SEQ ID NO:1798	Cancer
HKZBS01	SEQ ID NO:1799	Cancer
HWHSO13	SEQ ID NO:1800	Connective/Epithelial
HWHSO13	SEQ ID NO:1801	Connective/Epithelial
HKZCK47	SEQ ID NO:1802	Immune/Hematopoietic, Reproductive
HCUHQ40	SEQ ID NO:1803	Cancer
HCUHQ40	SEQ ID NO:1804	Cancer
HCUHQ40	SEQ ID NO:1805	Cancer
HPJCP79	SEQ ID NO:1806	Cancer
HPJCP79	SEQ ID NO:1807	Cancer
HPJCP79	SEQ ID NO:1808	Cancer
HPJCP79	SEQ ID NO:1809	Cancer
HFXDI56	SEQ ID NO:1810	Immune/Hematopoietic, Musculoskeletal, Neural/Sensory
HFXDI56	SEQ ID NO:1811	Immune/Hematopoietic, Musculoskeletal, Neural/Sensory
HFXDI56	SEQ ID NO:1812	Immune/Hematopoietic, Musculoskeletal, Neural/Sensory
HFXDI56	SEQ ID NO:1813	Immune/Hematopoietic, Musculoskeletal, Neural/Sensory
HRDEP41	SEQ ID NO:1814	Cancer
HRDEP41	SEQ ID NO:1815	Cancer
HTEGF16	SEQ ID NO:1816	Cancer
HTEGF16	SEQ ID NO:1817	Cancer
HTEGF16	SEQ ID NO:1818	Cancer
HSUMA53	SEQ ID NO:1819	Cancer
HSUMA53	SEQ ID NO:1820	Cancer
HSUMA53	SEQ ID NO:1821	Cancer
HSUMA53	SEQ ID NO:1822	Cancer
HSET33	SEQ ID NO:1823	Digestive
HSET33	SEQ ID NO:1824	Digestive
HTTIJ31	SEQ ID NO:1825	Reproductive
HTTIJ31	SEQ ID NO:1826	Reproductive
HTPFX16	SEQ ID NO:1827	Digestive, Reproductive, Respiratory
HTPFX16	SEQ ID NO:1828	Digestive, Reproductive, Respiratory
HTFMX90	SEQ ID NO:1829	Cancer
HTFMX90	SEQ ID NO:1830	Cancer
HTFMX90	SEQ ID NO:1831	Cancer
HE8FD93	SEQ ID NO:1832	Cancer
HE8FD93	SEQ ID NO:1833	Cancer
HE8FD93	SEQ ID NO:1834	Cancer
HE8FD93	SEQ ID NO:1835	Cancer
HKGBJ74	SEQ ID NO:1836	Cancer
HKGBJ74	SEQ ID NO:1837	Cancer

HKGBJ74	SEQ ID NO:1838		Cancer
HKGBJ74	SEQ ID NO:1839		Cancer
HEEAG84	SEQ ID NO:1840		Reproductive
HEEAG84	SEQ ID NO:1841		Reproductive
HEOQX60	SEQ ID NO:1842		Cancer
HEOQX60	SEQ ID NO:1843		Cancer
HNGGB09	SEQ ID NO:1844		Immune/Hematopoietic
HNGGB09	SEQ ID NO:1845		Immune/Hematopoietic
HKIYI48	SEQ ID NO:1846		Cancer
HKIYI48	SEQ ID NO:1847		Cancer
HKIYI48	SEQ ID NO:1848		Cancer
HKIYI48	SEQ ID NO:1849		Cancer
HSYAB05	SEQ ID NO:1850		Cancer
HSYAB05	SEQ ID NO:1851		Cancer
HARMJ38	SEQ ID NO:1852		Cancer
HARMJ38	SEQ ID NO:1853		Cancer
HARMJ38	SEQ ID NO:1854		Cancer
HARMJ38	SEQ ID NO:1855		Cancer
HDTJG33	SEQ ID NO:1856		Cancer
HWAGJ85	SEQ ID NO:1857		Cardiovascular, Immune/Hematopoietic
HWAGJ85	SEQ ID NO:1858		Cardiovascular, Immune/Hematopoietic
HE2OW03	SEQ ID NO:1859		Mixed Fetal
HE2OW03	SEQ ID NO:1860		Mixed Fetal
HBQAE92	SEQ ID NO:1861		Digestive, Neural/Sensory
HBQAE92	SEQ ID NO:1862		Digestive, Neural/Sensory
HBQAE92	SEQ ID NO:1863		Digestive, Neural/Sensory
HTODL92	SEQ ID NO:1864		Cancer
HTODL92	SEQ ID NO:1865		Cancer
HTODL92	SEQ ID NO:1866		Cancer
HLQBR41	SEQ ID NO:1867		Cancer
HLQBR41	SEQ ID NO:1868		Cancer
HDSAP92	SEQ ID NO:1869		Cancer
HDSAP92	SEQ ID NO:1870		Cancer
HTAEC92	SEQ ID NO:1871		Cancer
HTAEC92	SEQ ID NO:1872		Cancer
HSLCK11	SEQ ID NO:1873		Cancer
HSLCK11	SEQ ID NO:1874		Cancer
HSLCK11	SEQ ID NO:1875		Cancer
HFCDR13	SEQ ID NO:1876		Neural/Sensory
HSLDS06	SEQ ID NO:1877		Musculoskeletal
HSLEF58	SEQ ID NO:1878		Cardiovascular, Digestive, Musculoskeletal
HPCAO10	SEQ ID NO:1879		Cancer
HMEJL61	SEQ ID NO:1880		Cancer
HMEJL61	SEQ ID NO:1881		Cancer
HMEJL61	SEQ ID NO:1882		Cancer
HUSHH92	SEQ ID NO:1883		Cancer
HUSHH92	SEQ ID NO:1884		Cancer
HUSHH92	SEQ ID NO:1885		Cancer
HUSHH92	SEQ ID NO:1886		Cancer

HBZAI90	SEQ ID NO:1887		Immune/Hematopoietic, Reproductive
HBZAI90	SEQ ID NO:1888		Immune/Hematopoietic, Reproductive
HNGIQ57	SEQ ID NO:1889		Immune/Hematopoietic
HNGIQ57	SEQ ID NO:1890		Immune/Hematopoietic
HNGJF62	SEQ ID NO:1891		Immune/Hematopoietic
HNGJF62	SEQ ID NO:1892		Immune/Hematopoietic
HFXJY38	SEQ ID NO:1893		Neural/Sensory
HFXJY38	SEQ ID NO:1894		Neural/Sensory
HFXKR54	SEQ ID NO:1895		Endocrine, Immune/Hematopoietic, Neural/Sensory
HFXKR54	SEQ ID NO:1896		Endocrine, Immune/Hematopoietic, Neural/Sensory
HFXKR54	SEQ ID NO:1897		Endocrine, Immune/Hematopoietic, Neural/Sensory
HAPOB80	SEQ ID NO:1898		Immune/Hematopoietic, Musculoskeletal
HAPOB80	SEQ ID NO:1899		Immune/Hematopoietic, Musculoskeletal
HAPOB80	SEQ ID NO:1900		Immune/Hematopoietic, Musculoskeletal
HAPOB80	SEQ ID NO:1901		Immune/Hematopoietic, Musculoskeletal
HBJHJ80	SEQ ID NO:1902		Connective/Epithelial, Immune/Hematopoietic, Reproductive
HFADF37	SEQ ID NO:1903		Cancer
HFADF37	SEQ ID NO:1904		Cancer
HNTSS75	SEQ ID NO:1905		Cancer
HCQDE22	SEQ ID NO:1906		Digestive
HCQDE22	SEQ ID NO:1907		Digestive
HE8NQ42	SEQ ID NO:1908		Mixed Fetal
HE8NQ42	SEQ ID NO:1909		Mixed Fetal
HE8QD31	SEQ ID NO:1910		Digestive, Mixed Fetal, Neural/Sensory
HE8QD31	SEQ ID NO:1911		Digestive, Mixed Fetal, Neural/Sensory
HE9PR39	SEQ ID NO:1912		Digestive, Mixed Fetal, Musculoskeletal
HE9PR39	SEQ ID NO:1913		Digestive, Mixed Fetal, Musculoskeletal
HE9PR39	SEQ ID NO:1914		Digestive, Mixed Fetal, Musculoskeletal
HE9PR39	SEQ ID NO:1915		Digestive, Mixed Fetal, Musculoskeletal
HNHLA36	SEQ ID NO:1916		Immune/Hematopoietic,

			Reproductive
HNHLA36	SEQ ID NO:1917		Immune/Hematopoietic, Reproductive
HNHOD23	SEQ ID NO:1918		Cancer
HNHOD23	SEQ ID NO:1919		Cancer
HNHOD23	SEQ ID NO:1920		Cancer
HNGNI25	SEQ ID NO:1921		Immune/Hematopoietic
HNGNI25	SEQ ID NO:1922		Immune/Hematopoietic
HNGNI25	SEQ ID NO:1923		Immune/Hematopoietic
HNGNI25	SEQ ID NO:1924		Immune/Hematopoietic
HNGOQ44	SEQ ID NO:1925		Immune/Hematopoietic
HNGOQ44	SEQ ID NO:1926		Immune/Hematopoietic
HTLGE31	SEQ ID NO:1927		Immune/Hematopoietic, Reproductive
HODHE60	SEQ ID NO:1928		Reproductive
HODHE60	SEQ ID NO:1929		Reproductive
HTLIV19	SEQ ID NO:1930		Reproductive
HOSDW58	SEQ ID NO:1931		Cancer
HOSDW58	SEQ ID NO:1932		Cancer
HOSDW58	SEQ ID NO:1933		Cancer
HPJDM47	SEQ ID NO:1934		Reproductive
HPJDM47	SEQ ID NO:1935		Reproductive
HPJEC20	SEQ ID NO:1936		Cancer
HPJEC20	SEQ ID NO:1937		Cancer
HTTJK27	SEQ ID NO:1938		Reproductive
HTTJK27	SEQ ID NO:1939		Reproductive
HTFOE85	SEQ ID NO:1940		Immune/Hematopoietic
HTFOE85	SEQ ID NO:1941		Immune/Hematopoietic
HTFOE85	SEQ ID NO:1942		Immune/Hematopoietic
HIPBA31	SEQ ID NO:1943		Cancer
HIPBA31	SEQ ID NO:1944		Cancer
HFVJY02	SEQ ID NO:1945		Digestive, Mixed Fetal, Neural/Sensory
HFVJY02	SEQ ID NO:1946		Digestive, Mixed Fetal, Neural/Sensory
HFVJY02	SEQ ID NO:1947		Digestive, Mixed Fetal, Neural/Sensory
HFVJY02	SEQ ID NO:1948		Digestive, Mixed Fetal, Neural/Sensory
HFVJY02	SEQ ID NO:1949		Digestive, Mixed Fetal, Neural/Sensory
HOCOO19	SEQ ID NO:1950		Cancer
HOCOO19	SEQ ID NO:1951		Cancer
HOCOO19	SEQ ID NO:1952		Cancer
HWMKQ25	SEQ ID NO:1953		Digestive, Reproductive
HWMKQ25	SEQ ID NO:1954		Digestive, Reproductive
HWMKQ25	SEQ ID NO:1955		Digestive, Reproductive
HCOPG62	SEQ ID NO:1956		Cancer

HCOPG62	SEQ ID NO:1957		Cancer
HNKEL47	SEQ ID NO:1958		Cardiovascular, Connective/Epithelial, Digestive
HNKEL47	SEQ ID NO:1959		Cardiovascular, Connective/Epithelial, Digestive
HTPIY88	SEQ ID NO:1960		Digestive
HTPIY88	SEQ ID NO:1961		Digestive
HTPIY88	SEQ ID NO:1962		Digestive
HTPIY88	SEQ ID NO:1963		Digestive
HEGBS69	SEQ ID NO:1964		Neural/Sensory, Reproductive
HEGBS69	SEQ ID NO:1965		Neural/Sensory, Reproductive
HOFMU07	SEQ ID NO:1966		Reproductive
HOFMU07	SEQ ID NO:1967		Reproductive
HLWBM40	SEQ ID NO:1968		Neural/Sensory, Reproductive
HLWBM40	SEQ ID NO:1969		Neural/Sensory, Reproductive
HLWBM40	SEQ ID NO:1970		Neural/Sensory, Reproductive
HAMFT10	SEQ ID NO:1971		Cancer
HAMFT10	SEQ ID NO:1972		Cancer
HNTBP17	SEQ ID NO:1973		Cancer
HNTBP17	SEQ ID NO:1974		Cancer
HWDAO40	SEQ ID NO:1975		Cancer
HWDAO40	SEQ ID NO:1976		Cancer
HWDAO40	SEQ ID NO:1977		Cancer
HAJCL25	SEQ ID NO:1978		Immune/Hematopoietic
HAJCL25	SEQ ID NO:1979		Immune/Hematopoietic
HAJCL25	SEQ ID NO:1980		Immune/Hematopoietic
HNTEO95	SEQ ID NO:1981		Immune/Hematopoietic
HNTEO95	SEQ ID NO:1982		Immune/Hematopoietic
HNTEO95	SEQ ID NO:1983		Immune/Hematopoietic
HWAFG52	SEQ ID NO:1984		Cancer
HWAFG52	SEQ ID NO:1985		Cancer
HWAFG52	SEQ ID NO:1986		Cancer
HWAFG52	SEQ ID NO:1987		Cancer
HWAHE17	SEQ ID NO:1988		Digestive, Immune/Hematopoietic
HWAHE17	SEQ ID NO:1989		Digestive, Immune/Hematopoietic
HWAHE17	SEQ ID NO:1990		Digestive, Immune/Hematopoietic
HUJBK19	SEQ ID NO:1991		Cancer
HUJBK19	SEQ ID NO:1992		Cancer
HUJBK19	SEQ ID NO:1993		Cancer
HWHJD93	SEQ ID NO:1994		Cancer
HWHJD93	SEQ ID NO:1995		Cancer
HAOST94	SEQ ID NO:1996		Cancer
HAOST94	SEQ ID NO:1997		Cancer
HKZAH22	SEQ ID NO:1998		Reproductive
HKZAH22	SEQ ID NO:1999		Reproductive
HKZAH22	SEQ ID NO:2000		Reproductive

HKZAO35	SEQ ID NO:2001		Reproductive
HKZAO35	SEQ ID NO:2002		Reproductive
HWHSK19	SEQ ID NO:2003		Cancer
HWHSK19	SEQ ID NO:2004		Cancer
HWHSK19	SEQ ID NO:2005		Cancer
HMWFG79	SEQ ID NO:2006		Digestive, Immune/Hematopoietic, Reproductive
HMWFG79	SEQ ID NO:2007		Digestive, Immune/Hematopoietic, Reproductive
HMWFG79	SEQ ID NO:2008		Digestive, Immune/Hematopoietic, Reproductive
HMWFG79	SEQ ID NO:2009		Digestive, Immune/Hematopoietic, Reproductive
HMWFG79	SEQ ID NO:2010		Digestive, Immune/Hematopoietic, Reproductive
HMTAE85	SEQ ID NO:2011		Cancer
HMTBI36	SEQ ID NO:2012		Cancer
HSUME76	SEQ ID NO:2013		Cancer
HSUME76	SEQ ID NO:2014		Cancer
HTEAF65	SEQ ID NO:2015		Excretory, Reproductive
HTEAT31	SEQ ID NO:2016		Cancer
HAJAN23	SEQ ID NO:2017		Cancer
HAPRJ16	SEQ ID NO:2018		Cancer
HDTDT55	SEQ ID NO:2019		Cancer
HSKDA27	SEQ ID NO:2020		Cancer
HSKDA27	SEQ ID NO:2021		Cancer
HWLED11	SEQ ID NO:2022		Cancer
HADGD33	SEQ ID NO:2023		Connective/Epithelial, Neural/Sensory, Reproductive
HCEBF19	SEQ ID NO:2024		Cancer
HCEBF19	SEQ ID NO:2025		Cancer
HDPHH40	SEQ ID NO:2026		Cancer
HHEPM33	SEQ ID NO:2027		Cancer
HJBAF16	SEQ ID NO:2028		Cancer
HJBCU04	SEQ ID NO:2029		Cancer
HWABY10	SEQ ID NO:2030		Cancer
HWABY10	SEQ ID NO:2031		Cancer
HWABY10	SEQ ID NO:2032		Cancer
HWABY10	SEQ ID NO:2033		Cancer
HDPQN11	SEQ ID NO:2034		Cancer
HDPQN11	SEQ ID NO:2035		Cancer
HMSAW68	SEQ ID NO:2036		Cancer
HMSGP80	SEQ ID NO:2037		Cancer
HPJBZ76	SEQ ID NO:2038		Cancer
HSIGM62	SEQ ID NO:2039		Cancer
HSLHS22	SEQ ID NO:2040		Cancer
HTXOZ19	SEQ ID NO:2041		Cancer
HTXOZ19	SEQ ID NO:2042		Cancer
HAPQQ94	SEQ ID NO:2043		Immune/Hematopoietic,

			Reproductive
HAPQQ94	SEQ ID NO:2044		Immune/Hematopoietic, Reproductive
HAPSA79	SEQ ID NO:2045		Cancer
HAPSA79	SEQ ID NO:2046		Cancer
HAPSA79	SEQ ID NO:2047		Cancer
HDP AJ93	SEQ ID NO:2048		Cancer
HELGF34	SEQ ID NO:2049		Cancer
HETEQ88	SEQ ID NO:2050		Cancer
HMSAC18	SEQ ID NO:2051		Cancer
HMSAC18	SEQ ID NO:2052		Cancer
HPQSH59	SEQ ID NO:2053		Cancer
HSIFV30	SEQ ID NO:2054		Cancer
HSVCB08	SEQ ID NO:2055		Cancer
HT3SF53	SEQ ID NO:2056		Cancer
HARMS04	SEQ ID NO:2057		Connective/Epithelial, Digestive
HCDBP36	SEQ ID NO:2058		Musculoskeletal
HCEPE30	SEQ ID NO:2059		Excretory, Neural/Sensory
HE9RM63	SEQ ID NO:2060		Cancer
HKAJF71	SEQ ID NO:2061		Cancer
HNBAF49	SEQ ID NO:2062		Cancer
HSLDJ89	SEQ ID NO:2063		Cancer
HSXGI47	SEQ ID NO:2064		Cancer
HTEAJ18	SEQ ID NO:2065		Reproductive
HTTEV40	SEQ ID NO:2066		Cancer
HWBCB89	SEQ ID NO:2067		Cancer
HWHGZ51	SEQ ID NO:2068		Cancer
HADDH60	SEQ ID NO:2069		Connective/Epithelial, Immune/Hematopoietic, Neural/Sensory
HBXCL93	SEQ ID NO:2070		Neural/Sensory, Reproductive
HPTRH66	SEQ ID NO:2071		Cancer
HNFHD58	SEQ ID NO:2072		Cancer
HACAB58	SEQ ID NO:2073		Cancer
HCE3Z39	SEQ ID NO:2074		Cancer
HCFCU69	SEQ ID NO:2075		Cancer
HCE3Z39	SEQ ID NO:2076		Cancer
HCELE47	SEQ ID NO:2077		Cancer
HCWHP79	SEQ ID NO:2078		Immune/Hematopoietic
HDLAG89	SEQ ID NO:2079		Cancer
HDLAO28	SEQ ID NO:2080		Cancer
HDQGY41	SEQ ID NO:2081		Cancer
HE8FK78	SEQ ID NO:2082		Cancer
HE8FK78	SEQ ID NO:2083		Cancer
HETHR73	SEQ ID NO:2084		Cancer
HFIUW36	SEQ ID NO:2085		Cancer
HFKKS66	SEQ ID NO:2086		Cancer
HFPPK57	SEQ ID NO:2087		Neural/Sensory, Reproductive
HFVJP07	SEQ ID NO:2088		Digestive, Immune/Hematopoietic
HLQEM64	SEQ ID NO:2089		Cancer
HSSDG41	SEQ ID NO:2090		Cancer

HLQGP82	SEQ ID NO:2091		Connective/Epithelial, Digestive, Musculoskeletal
HMSMD07	SEQ ID NO:2092		Cancer
HNGIR58	SEQ ID NO:2093		Immune/Hematopoietic
HMAMI21	SEQ ID NO:2094		Cancer
HNHNB29	SEQ ID NO:2095		Immune/Hematopoietic
HNTEO78	SEQ ID NO:2096		Digestive, Immune/Hematopoietic
HJPAY76	SEQ ID NO:2097		Cancer
HOEEK12	SEQ ID NO:2098		Cancer
HOFNC14	SEQ ID NO:2099		Reproductive
HOSNU69	SEQ ID NO:2100		Cancer
HPJCL28	SEQ ID NO:2101		Neural/Sensory, Reproductive
HRACI26	SEQ ID NO:2102		Digestive, Excretory
HTLIT63	SEQ ID NO:2103		Reproductive
HTEAM34	SEQ ID NO:2104		Reproductive
HTEAM34	SEQ ID NO:2105		Reproductive
HUFGH53	SEQ ID NO:2106		Cancer
HUSBA88	SEQ ID NO:2107		Cancer
HELHN47	SEQ ID NO:2108		Cancer
HELHN47	SEQ ID NO:2109		Cancer
HELHN47	SEQ ID NO:2110		Cancer
HETAY39	SEQ ID NO:2111		Cancer
HFICR14	SEQ ID NO:2112		Cancer
HFICR14	SEQ ID NO:2113		Cancer
HFKET18	SEQ ID NO:2114		Cancer
HFXDK20	SEQ ID NO:2115		Immune/Hematopoietic, Neural/Sensory
HKMLX18	SEQ ID NO:2116		Cancer
HMSCM88	SEQ ID NO:2117		Immune/Hematopoietic
HMABG70	SEQ ID NO:2118		Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HMADJ74	SEQ ID NO:2119		Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HMADJ14	SEQ ID NO:2120		Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HMADJ14	SEQ ID NO:2121		Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HMADJ14	SEQ ID NO:2122		Connective/Epithelial, Immune/Hematopoietic, Musculoskeletal
HNEBY54	SEQ ID NO:2123		Cancer
HNEDD37	SEQ ID NO:2124		Cancer
HNGOU82	SEQ ID NO:2125		Immune/Hematopoietic, Reproductive
HNGOW62	SEQ ID NO:2126		Immune/Hematopoietic
HSICO66	SEQ ID NO:2127		Cancer
HSIDQ93	SEQ ID NO:2128		Cancer
HSLGM81	SEQ ID NO:2129		Cancer



HSYBM41	SEQ ID NO:2130		Cancer
HSODB85	SEQ ID NO:2131		Cancer
HSRFZ57	SEQ ID NO:2132		Excretory, Musculoskeletal
HSXAZ05	SEQ ID NO:2133		Neural/Sensory, Respiratory
HTPCW21	SEQ ID NO:2134		Digestive; Neural/Sensory
HTPCW21	SEQ ID NO:2135		Digestive, Neural/Sensory
HTXKF95	SEQ ID NO:2136		Cancer
HTXKF95	SEQ ID NO:2137		Cancer
HUFBC44	SEQ ID NO:2138		Digestive, Mixed Fetal, Neural/Sensory
HAAAI67	SEQ ID NO:2139		Cancer
HFKIA71	SEQ ID NO:2140		Cancer
HAMFP32	SEQ ID NO:2141		Cancer
HAPQU71	SEQ ID NO:2142		Cancer
HAPQU71	SEQ ID NO:2143		Cancer
HLHDL42	SEQ ID NO:2144		Cancer
HAVVG36	SEQ ID NO:2145		Cancer
HBGNP63	SEQ ID NO:2146		Reproductive
HBJNC59	SEQ ID NO:2147		Cancer
HAPQT56	SEQ ID NO:2148		Cancer
HCABW07	SEQ ID NO:2149		Cancer
HDPFB02	SEQ ID NO:2150		Cancer
HMWDB84	SEQ ID NO:2151		Cancer
HDPFB02	SEQ ID NO:2152		Cancer
HDPFY41	SEQ ID NO:2153		Cancer
HDPIE85	SEQ ID NO:2154		Cancer
HDPOE32	SEQ ID NO:2155		Cancer
HWABL61	SEQ ID NO:2156		Cancer
HWABW88	SEQ ID NO:2157		Cancer
HWDAQ83	SEQ ID NO:2158		Cancer
HWDAQ83	SEQ ID NO:2159		Cancer
HWLHZ79	SEQ ID NO:2160		Connective/Epithelial, Digestive, Reproductive
HTXJM94	SEQ ID NO:2161		Cancer
HDPQG01	SEQ ID NO:2162		Cancer
HJPAD80	SEQ ID NO:2163		Cancer
HDPQG01	SEQ ID NO:2164		Cancer
HFXLF67	SEQ ID NO:2165		Neural/Sensory
HB2IO57	SEQ ID NO:2166		Cancer
HKGDP17	SEQ ID NO:2167		Respiratory
HLQFB12	SEQ ID NO:2168		Digestive, Reproductive
HLQFT18	SEQ ID NO:2169		Digestive, Reproductive
HOFNX30	SEQ ID NO:2170		Reproductive
HSSDM23	SEQ ID NO:2171		Cancer
HSSDM23	SEQ ID NO:2172		Cancer
HSVBD67	SEQ ID NO:2173		Cancer
HSVBD67	SEQ ID NO:2174		Cancer
HTGAT51	SEQ ID NO:2175		Cardiovascular,

			Immune/Hematopoietic, Reproductive
HTLGV19	SEQ ID NO:2176		Excretory, Reproductive
HTPHH74	SEQ ID NO:2177		Cancer
HTFOB75	SEQ ID NO:2178		Cancer
HTPHH74	SEQ ID NO:2179		Cancer
HWHGK36	SEQ ID NO:2180		Cancer
HLWAD77	SEQ ID NO:2181		Cancer
HDTGF15	SEQ ID NO:2182		Cancer
HWMBB68	SEQ ID NO:2183		Cancer
HWMBB68	SEQ ID NO:2184		Cancer
HAGDA35	SEQ ID NO:2185		Cancer
HAGDA35	SEQ ID NO:2186		Cancer
HAGDA35	SEQ ID NO:2187		Cancer
HRODQ04	SEQ ID NO:2188		Cancer
HTOJV86	SEQ ID NO:2189		Cancer
HCEFZ82	SEQ ID NO:2190		Cancer
HNGFW58	SEQ ID NO:2191		Cancer
HHBGE77	SEQ ID NO:2192		Cancer
HADFW77	SEQ ID NO:2193		Cancer
HSIED48	SEQ ID NO:2194		Cancer
HCEFZ82	SEQ ID NO:2195		Cancer
HTTCT46	SEQ ID NO:2196		Cancer
HSDEE58	SEQ ID NO:2197		Cancer
HEBCV31	SEQ ID NO:2198		Cancer
HDPOL27	SEQ ID NO:2199		Cancer
HDPOL27	SEQ ID NO:2200		Cancer
HE6DI14	SEQ ID NO:2201		Cancer
HLYAN43	SEQ ID NO:2202		Cancer
HDPUM13	SEQ ID NO:2203		Cancer
HPLAT62	SEQ ID NO:2204		Cancer
HAPQT56	SEQ ID NO:2205		Cancer
HACBG19	SEQ ID NO:2206		Cancer
HACBG19	SEQ ID NO:2207		Cancer
HLYAV34	SEQ ID NO:2208		Cancer
HCNSM85	SEQ ID NO:2209		Cancer
HTOCG60	SEQ ID NO:2210		Cancer
HLYAV34	SEQ ID NO:2211		Cancer
HDPWX42	SEQ ID NO:2212		Cancer
HOFNF53	SEQ ID NO:2213		Reproductive
HOFNF53	SEQ ID NO:2214		Reproductive
HMSEO15	SEQ ID NO:2215		Cancer
HBXFT65	SEQ ID NO:2216		Cancer
HFCEQ37	SEQ ID NO:2217		Cancer
HWNFG66	SEQ ID NO:2218		Digestive
HOHCA60	SEQ ID NO:2219		Cancer
HOHCA60	SEQ ID NO:2220		Cancer
HOHCA60	SEQ ID NO:2221		Cancer
HOHCA60	SEQ ID NO:2222		Cancer
HOHCA60	SEQ ID NO:2223		Cancer
HLDRR08	SEQ ID NO:2224		Digestive
HSKNP59	SEQ ID NO:2225		Musculoskeletal
HSKNP59	SEQ ID NO:2226		Musculoskeletal
HAMHE82	SEQ ID NO:2227		Cancer

HBIOO68	SEQ ID NO:2228	Cancer
HCE3C63	SEQ ID NO:2229	Mixed Fetal, Neural/Sensory
HCNDV12	SEQ ID NO:2230	Digestive, Reproductive
HMWDW68	SEQ ID NO:2231	Cancer
HE2BC57	SEQ ID NO:2232	Cancer
HSDEE58	SEQ ID NO:2233	Cancer
HE9OW91	SEQ ID NO:2234	Cancer
HFCFI20	SEQ ID NO:2235	Cancer
HELEN05	SEQ ID NO:2236	Cancer
HISEL50	SEQ ID NO:2237	Cancer
HLHDL62	SEQ ID NO:2238	Cancer
HDFQB93	SEQ ID NO:2239	Cancer
HLHDQ86	SEQ ID NO:2240	Cancer
HLNAB24	SEQ ID NO:2241	Immune/Hematopoietic
HLYBQ90	SEQ ID NO:2242	Cancer
HLYBQ90	SEQ ID NO:2243	Cancer
HNHDP39	SEQ ID NO:2244	Endocrine, Immune/Hematopoietic, Reproductive
HNTAC64	SEQ ID NO:2245	Cancer
HNTMY29	SEQ ID NO:2246	Connective/Epithelial, Reproductive
HOFOC33	SEQ ID NO:2247	Reproductive
HOFOC33	SEQ ID NO:2248	Reproductive
HTWFK18	SEQ ID NO:2249	Connective/Epithelial, Immune/Hematopoietic
HAPNJ39	SEQ ID NO:2250	Cancer
HDQFU27	SEQ ID NO:2251	Cancer
HETJZ45	SEQ ID NO:2252	Cancer
HTEMX36	SEQ ID NO:2253	Cancer
HNTCH90	SEQ ID NO:2254	Cancer
HWLBP46	SEQ ID NO:2255	Cancer
HA5BM53	SEQ ID NO:2256	Cancer
HMCEH49	SEQ ID NO:2257	Cancer
HKBAL25	SEQ ID NO:2258	Digestive, Musculoskeletal
HE8EF43	SEQ ID NO:2259	Cancer
HE2RN91	SEQ ID NO:2260	Cancer
HTLIO20	SEQ ID NO:2261	Immune/Hematopoietic, Neural/Sensory
HBIMF63	SEQ ID NO:2262	Reproductive
HE9PM90	SEQ ID NO:2263	Cancer
HNTDX22	SEQ ID NO:2264	Reproductive
HHFCE59	SEQ ID NO:2265	Cancer
HCGAD44	SEQ ID NO:2266	Cancer
HSSJJ51	SEQ ID NO:2267	Cancer

In preferred embodiments, the albumin fusion proteins of the invention are capable of a therapeutic activity and/or biologic activity corresponding to the therapeutic activity and/or biologic activity of the Therapeutic protein corresponding to the Therapeutic protein portion of the albumin fusion protein listed in the corresponding row of Table 1.

5 In further preferred embodiments, the therapeutically active protein portions of the albumin fusion proteins of the invention are fragments or variants of the reference sequence cited in the "Exemplary Identifier" column of Table 1, and are capable of the therapeutic activity and/or biologic activity of the corresponding Therapeutic protein.

## 10 *Polypeptide and Polynucleotide Fragments and Variants*

### *Fragments*

The present invention is further directed to fragments of the Therapeutic proteins described in Table 1, albumin proteins, and/or albumin fusion proteins of the invention.

Even if deletion of one or more amino acids from the N-terminus of a protein  
15 results in modification or loss of one or more biological functions of the Therapeutic protein, albumin protein, and/or albumin fusion protein, other Therapeutic activities and/or functional activities (e.g., biological activities, ability to multimerize, ability to bind a ligand) may still be retained. For example, the ability of polypeptides with N-terminal deletions to induce and/or bind to antibodies which recognize the complete or mature  
20 forms of the polypeptides generally will be retained when less than the majority of the residues of the complete polypeptide are removed from the N-terminus. Whether a particular polypeptide lacking N-terminal residues of a complete polypeptide retains such immunologic activities can readily be determined by routine methods described herein and otherwise known in the art. It is not unlikely that a mutein with a large number of deleted  
25 N-terminal amino acid residues may retain some biological or immunogenic activities. In fact, peptides composed of as few as six amino acid residues may often evoke an immune response.

Accordingly, fragments of a Therapeutic protein corresponding to a Therapeutic protein portion of an albumin fusion protein of the invention, include the full length  
30 protein as well as polypeptides having one or more residues deleted from the amino terminus of the amino acid sequence of the reference polypeptide (i.e., a Therapeutic protein as disclosed in Table I). In particular, N-terminal deletions may be described by

the general formula  $m-q$ , where  $q$  is a whole integer representing the total number of amino acid residues in a reference polypeptide (e.g., a Therapeutic protein referred to in Table 1), and  $m$  is defined as any integer ranging from 2 to  $q-6$ . Polynucleotides encoding these polypeptides are also encompassed by the invention.

5 In addition, fragments of serum albumin polypeptides corresponding to an albumin protein portion of an albumin fusion protein of the invention, include the full length protein as well as polypeptides having one or more residues deleted from the amino terminus of the amino acid sequence of the reference polypeptide (i.e., serum albumin). In particular, N-terminal deletions may be described by the general formula  $m-585$ , where  
10 585 is a whole integer representing the total number of amino acid residues in serum albumin (SEQ ID NO:18), and  $m$  is defined as any integer ranging from 2 to 579. Polynucleotides encoding these polypeptides are also encompassed by the invention.

Moreover, fragments of albumin fusion proteins of the invention, include the full length albumin fusion protein as well as polypeptides having one or more residues deleted  
15 from the amino terminus of the albumin fusion protein. In particular, N-terminal deletions may be described by the general formula  $m-q$ , where  $q$  is a whole integer representing the total number of amino acid residues in the albumin fusion protein, and  $m$  is defined as any integer ranging from 2 to  $q-6$ . Polynucleotides encoding these polypeptides are also encompassed by the invention.

20 Also as mentioned above, even if deletion of one or more amino acids from the N-terminus or C-terminus of a reference polypeptide (e.g., a Therapeutic protein and/or serum albumin protein) results in modification or loss of one or more biological functions of the protein, other functional activities (e.g., biological activities, ability to multimerize, ability to bind a ligand) and/or Therapeutic activities may still be retained. For example  
25 the ability of polypeptides with C-terminal deletions to induce and/or bind to antibodies which recognize the complete or mature forms of the polypeptide generally will be retained when less than the majority of the residues of the complete or mature polypeptide are removed from the C-terminus. Whether a particular polypeptide lacking the N-terminal and/or C-terminal residues of a reference polypeptide retains Therapeutic activity  
30 can readily be determined by routine methods described herein and/or otherwise known in the art.

The present invention further provides polypeptides having one or more residues

deleted from the carboxy terminus of the amino acid sequence of a Therapeutic protein corresponding to a Therapeutic protein portion of an albumin fusion protein of the invention (e.g., a Therapeutic protein referred to in Table 1). In particular, C-terminal deletions may be described by the general formula 1-n, where n is any whole integer ranging from 6 to q-1, and where q is a whole integer representing the total number of amino acid residues in a reference polypeptide (e.g., a Therapeutic protein referred to in Table 1). Polynucleotides encoding these polypeptides are also encompassed by the invention.

In addition, the present invention provides polypeptides having one or more residues deleted from the carboxy terminus of the amino acid sequence of an albumin protein corresponding to an albumin protein portion of an albumin fusion protein of the invention (e.g., serum albumin). In particular, C-terminal deletions may be described by the general formula 1-n, where n is any whole integer ranging from 6 to 584, where 584 is the whole integer representing the total number of amino acid residues in serum albumin (SEQ ID NO:18) minus 1. Polynucleotides encoding these polypeptides are also encompassed by the invention.

Moreover, the present invention provides polypeptides having one or more residues deleted from the carboxy terminus of an albumin fusion protein of the invention. In particular, C-terminal deletions may be described by the general formula 1-n, where n is any whole integer ranging from 6 to q-1, and where q is a whole integer representing the total number of amino acid residues in an albumin fusion protein of the invention. Polynucleotides encoding these polypeptides are also encompassed by the invention.

In addition, any of the above described N- or C-terminal deletions can be combined to produce a N- and C-terminal deleted reference polypeptide. The invention also provides polypeptides having one or more amino acids deleted from both the amino and the carboxyl termini, which may be described generally as having residues m-n of a reference polypeptide (e.g., a Therapeutic protein referred to in Table 1, or serum albumin (e.g., SEQ ID NO:18), or an albumin fusion protein of the invention) where n and m are integers as described above. Polynucleotides encoding these polypeptides are also encompassed by the invention.

The present application is also directed to proteins containing polypeptides at least 80%, 85%, 90%, 95%, 96%, 97%, 98%, or 99% identical to a reference polypeptide

sequence (e.g., a Therapeutic protein; serum albumin protein or an albumin fusion protein of the invention) set forth herein, or fragments thereof. In preferred embodiments, the application is directed to proteins comprising polypeptides at least 80%, 85%, 90%, 95%, 96%, 97%, 98% or 99% identical to reference polypeptides having the amino acid  
5 sequence of N- and C-terminal deletions as described above. Polynucleotides encoding these polypeptides are also encompassed by the invention.

Preferred polypeptide fragments of the invention are fragments comprising, or alternatively, consisting of, an amino acid sequence that displays a Therapeutic activity and/or functional activity (e.g. biological activity) of the polypeptide sequence of the  
10 Therapeutic protein or serum albumin protein of which the amino acid sequence is a fragment.

Other preferred polypeptide fragments are biologically active fragments. Biologically active fragments are those exhibiting activity similar, but not necessarily identical, to an activity of the polypeptide of the present invention. The biological activity of the  
15 fragments may include an improved desired activity, or a decreased undesirable activity.

#### *Variants*

"Variant" refers to a polynucleotide or nucleic acid differing from a reference nucleic acid or polypeptide, but retaining essential properties thereof. Generally, variants  
20 are overall closely similar, and, in many regions, identical to the reference nucleic acid or polypeptide.

As used herein, "variant", refers to a Therapeutic protein portion of an albumin fusion protein of the invention, albumin portion of an albumin fusion protein of the invention, or albumin fusion protein differing in sequence from a Therapeutic protein (e.g.  
25 see "therapeutic" column of Table 1), albumin protein, and/or albumin fusion protein of the invention, respectively, but retaining at least one functional and/or therapeutic property thereof as described elsewhere herein or otherwise known in the art. Generally, variants are overall very similar, and, in many regions, identical to the amino acid sequence of the Therapeutic protein corresponding to a Therapeutic protein portion of an  
30 albumin fusion protein of the invention, albumin protein corresponding to an albumin protein portion of an albumin fusion protein of the invention, and/or albumin fusion protein of the invention. Nucleic acids encoding these variants are also encompassed by

the invention.

The present invention is also directed to proteins which comprise, or alternatively consist of, an amino acid sequence which is at least 80%, 85%, 90%, 95%, 96%, 97%, 98%, 99% or 100%, identical to, for example, the amino acid sequence of a Therapeutic protein corresponding to a Therapeutic protein portion of an albumin fusion protein of the invention (e.g., an amino acid sequence disclosed in the "Exemplary Identifier" column of Table 1, or fragments or variants thereof), albumin proteins (e.g., SEQ ID NO:18 or fragments or variants thereof) corresponding to an albumin protein portion of an albumin fusion protein of the invention, and/or albumin fusion proteins of the invention. Fragments of these polypeptides are also provided (e.g., those fragments described herein). Further polypeptides encompassed by the invention are polypeptides encoded by polynucleotides which hybridize to the complement of a nucleic acid molecule encoding an amino acid sequence of the invention under stringent hybridization conditions (e.g., hybridization to filter bound DNA in 6X Sodium chloride/Sodium citrate (SSC) at about 45 degrees Celsius, followed by one or more washes in 0.2X SSC, 0.1% SDS at about 50 - 65 degrees Celsius), under highly stringent conditions (e.g., hybridization to filter bound DNA in 6X sodium chloride/Sodium citrate (SSC) at about 45 degrees Celsius, followed by one or more washes in 0.1X SSC, 0.2% SDS at about 68 degrees Celsius), or under other stringent hybridization conditions which are known to those of skill in the art (see, for example, Ausubel, F.M. et al., eds., 1989 *Current protocol in Molecular Biology*, Green publishing associates, Inc., and John Wiley & Sons Inc., New York, at pages 6.3.1 - 6.3.6 and 2.10.3). Polynucleotides encoding these polypeptides are also encompassed by the invention.

By a polypeptide having an amino acid sequence at least, for example, 95% "identical" to a query amino acid sequence of the present invention, it is intended that the amino acid sequence of the subject polypeptide is identical to the query sequence except that the subject polypeptide sequence may include up to five amino acid alterations per each 100 amino acids of the query amino acid sequence. In other words, to obtain a polypeptide having an amino acid sequence at least 95% identical to a query amino acid sequence, up to 5% of the amino acid residues in the subject sequence may be inserted, deleted, or substituted with another amino acid. These alterations of the reference sequence may occur at the amino- or carboxy-terminal positions of the reference amino



acid sequence or anywhere between those terminal positions, interspersed either individually among residues in the reference sequence or in one or more contiguous groups within the reference sequence.

As a practical matter, whether any particular polypeptide is at least 80%, 85%, 90%, 95%, 96%, 97%, 98% or 99% identical to, for instance, the amino acid sequence of an albumin fusion protein of the invention or a fragment thereof (such as the Therapeutic protein portion of the albumin fusion protein or the albumin portion of the albumin fusion protein), can be determined conventionally using known computer programs. A preferred method for determining the best overall match between a query sequence (a sequence of the present invention) and a subject sequence, also referred to as a global sequence alignment, can be determined using the FASTDB computer program based on the algorithm of Brutlag et al. (Comp. App. Biosci.6:237-245 (1990)). In a sequence alignment the query and subject sequences are either both nucleotide sequences or both amino acid sequences. The result of said global sequence alignment is expressed as percent identity. Preferred parameters used in a FASTDB amino acid alignment are: Matrix=PAM 0, k-tuple=2, Mismatch Penalty=1, Joining Penalty=20, Randomization Group Length=0, Cutoff Score=1, Window Size=sequence length, Gap Penalty=5, Gap Size Penalty=0.05, Window Size=500 or the length of the subject amino acid sequence, whichever is shorter.

If the subject sequence is shorter than the query sequence due to N- or C-terminal deletions, not because of internal deletions, a manual correction must be made to the results. This is because the FASTDB program does not account for N- and C-terminal truncations of the subject sequence when calculating global percent identity. For subject sequences truncated at the N- and C-termini, relative to the query sequence, the percent identity is corrected by calculating the number of residues of the query sequence that are N- and C-terminal of the subject sequence, which are not matched/aligned with a corresponding subject residue, as a percent of the total bases of the query sequence. Whether a residue is matched/aligned is determined by results of the FASTDB sequence alignment. This percentage is then subtracted from the percent identity, calculated by the above FASTDB program using the specified parameters, to arrive at a final percent identity score. This final percent identity score is what is used for the purposes of the present invention. Only residues to the N- and C-termini of the subject sequence, which

are not matched/aligned with the query sequence, are considered for the purposes of manually adjusting the percent identity score. That is, only query residue positions outside the farthest N- and C- terminal residues of the subject sequence.

For example, a 90 amino acid residue subject sequence is aligned with a 100 residue query sequence to determine percent identity. The deletion occurs at the N-terminus of the subject sequence and therefore, the FASTDB alignment does not show a matching/alignment of the first 10 residues at the N-terminus. The 10 unpaired residues represent 10% of the sequence (number of residues at the N- and C- termini not matched/total number of residues in the query sequence) so 10% is subtracted from the percent identity score calculated by the FASTDB program. If the remaining 90 residues were perfectly matched the final percent identity would be 90%. In another example, a 90 residue subject sequence is compared with a 100 residue query sequence. This time the deletions are internal deletions so there are no residues at the N- or C-termini of the subject sequence which are not matched/aligned with the query. In this case the percent identity calculated by FASTDB is not manually corrected. Once again, only residue positions outside the N- and C-terminal ends of the subject sequence, as displayed in the FASTDB alignment, which are not matched/aligned with the query sequence are manually corrected for. No other manual corrections are to be made for the purposes of the present invention.

The variant will usually have at least 75 % (preferably at least about 80%, 90%, 95% or 99%) sequence identity with a length of normal HA or Therapeutic protein which is the same length as the variant. Homology or identity at the nucleotide or amino acid sequence level is determined by BLAST (Basic Local Alignment Search Tool) analysis using the algorithm employed by the programs blastp, blastn, blastx, tblastn and tblastx (Karlin *et al.*, Proc. Natl. Acad. Sci. USA 87: 2264-2268 (1990) and Altschul, J. Mol. Evol. 36: 290-300 (1993), fully incorporated by reference) which are tailored for sequence similarity searching.

The approach used by the BLAST program is to first consider similar segments between a query sequence and a database sequence, then to evaluate the statistical significance of all matches that are identified and finally to summarize only those matches which satisfy a preselected threshold of significance. For a discussion of basic issues in similarity searching of sequence databases, see Altschul *et al.*, (Nature Genetics 6:

119-129 (1994)) which is fully incorporated by reference. The search parameters for histogram, descriptions, alignments, expect (i.e., the statistical significance threshold for reporting matches against database sequences), cutoff, matrix and filter are at the default settings. The default scoring matrix used by blastp, blastx, tblastn, and tblastx is the  
5 BLOSUM62 matrix (Henikoff *et al.*, Proc. Natl. Acad. Sci. USA 89: 10915-10919 (1992), fully incorporated by reference). For blastn, the scoring matrix is set by the ratios of M (i.e., the reward score for a pair of matching residues) to N (i.e., the penalty score for mismatching residues), wherein the default values for M and N are 5 and -4, respectively. Four blastn parameters may be adjusted as follows: Q=10 (gap creation penalty); R=10  
10 (gap extension penalty); wink=1 (generates word hits at every wink<sup>th</sup> position along the query); and gapw=16 (sets the window width within which gapped alignments are generated). The equivalent Blastp parameter settings were Q=9; R=2; wink=1; and gapw=32. A Bestfit comparison between sequences, available in the GCG package version 10.0, uses DNA parameters GAP=50 (gap creation penalty) and LEN=3 (gap  
15 extension penalty) and the equivalent settings in protein comparisons are GAP=8 and LEN=2.

The polynucleotide variants of the invention may contain alterations in the coding regions, non-coding regions, or both. Especially preferred are polynucleotide variants containing alterations which produce silent substitutions, additions, or deletions, but do  
20 not alter the properties or activities of the encoded polypeptide. Nucleotide variants produced by silent substitutions due to the degeneracy of the genetic code are preferred. Moreover, polypeptide variants in which less than 50, less than 40, less than 30, less than 20, less than 10, or 5-50, 5-25, 5-10, 1-5, or 1-2 amino acids are substituted, deleted, or added in any combination are also preferred. Polynucleotide variants can be produced for  
25 a variety of reasons, e.g., to optimize codon expression for a particular host (change codons in the human mRNA to those preferred by a bacterial host, such as, yeast or *E. coli*).

In a preferred embodiment, a polynucleotide encoding an albumin portion of an albumin fusion protein of the invention is optimized for expression in yeast or mammalian  
30 cells. In further preferred embodiment, a polynucleotide encoding a Therapeutic protein portion of an albumin fusion protein of the invention is optimized for expression in yeast or mammalian cells. In a still further preferred embodiment, a polynucleotide encoding an

albumin fusion protein of the invention is optimized for expression in yeast or mammalian cells.

In an alternative embodiment, a codon optimized polynucleotide encoding a Therapeutic protein portion of an albumin fusion protein of the invention does not  
5 hybridize to the wild type polynucleotide encoding the Therapeutic protein under stringent hybridization conditions as described herein. In a further embodiment, a codon optimized polynucleotide encoding an albumin portion of an albumin fusion protein of the invention do not hybridize to the wild type polynucleotide encoding the albumin protein under  
10 stringent hybridization conditions as described herein. In another embodiment, a codon optimized polynucleotide encoding an albumin fusion protein of the invention do not hybridize to the wild type polynucleotide encoding the Therapeutic protein portion or the albumin protein portion under stringent hybridization conditions as described herein.

In an additional embodiment, polynucleotides encoding a Therapeutic protein portion of an albumin fusion protein of the invention do not comprise, or alternatively  
15 consist of, the naturally occurring sequence of that Therapeutic protein. In a further embodiment, polynucleotides encoding an albumin protein portion of an albumin fusion protein of the invention do not comprise, or alternatively consist of, the naturally occurring sequence of albumin protein. In an alternative embodiment, polynucleotides encoding an albumin fusion protein of the invention do not comprise, or alternatively consist of, the  
20 naturally occurring sequence of a Therapeutic protein portion or the albumin protein portion.

Naturally occurring variants are called "allelic variants," and refer to one of several alternate forms of a gene occupying a given locus on a chromosome of an organism. (Genes II, Lewin, B., ed., John Wiley & Sons, New York (1985)). These allelic variants  
25 can vary at either the polynucleotide and/or polypeptide level and are included in the present invention. Alternatively, non-naturally occurring variants may be produced by mutagenesis techniques or by direct synthesis.

Using known methods of protein engineering and recombinant DNA technology, variants may be generated to improve or alter the characteristics of the polypeptides of the  
30 present invention. For instance, one or more amino acids can be deleted from the N-terminus or C-terminus of the polypeptide of the present invention without substantial loss of biological function. As an example, Ron et al. (J. Biol. Chem. 268: 2984-2988 (1993))

reported variant KGF proteins having heparin binding activity even after deleting 3, 8, or 27 amino-terminal amino acid residues. Similarly, Interferon gamma exhibited up to ten times higher activity after deleting 8-10 amino acid residues from the carboxy terminus of this protein. (Dobeli et al., J. Biotechnology 7:199-216 (1988).)

5           Moreover, ample evidence demonstrates that variants often retain a biological activity similar to that of the naturally occurring protein. For example, Gayle and coworkers (J. Biol. Chem. 268:22105-22111 (1993)) conducted extensive mutational analysis of human cytokine IL-1a. They used random mutagenesis to generate over 3,500 individual IL-1a mutants that averaged 2.5 amino acid changes per variant over the entire  
10          length of the molecule. Multiple mutations were examined at every possible amino acid position. The investigators found that "[m]ost of the molecule could be altered with little effect on either [binding or biological activity]." In fact, only 23 unique amino acid sequences, out of more than 3,500 nucleotide sequences examined, produced a protein that significantly differed in activity from wild-type.

15          Furthermore, even if deleting one or more amino acids from the N-terminus or C-terminus of a polypeptide results in modification or loss of one or more biological functions, other biological activities may still be retained. For example, the ability of a deletion variant to induce and/or to bind antibodies which recognize the secreted form will likely be retained when less than the majority of the residues of the secreted form are  
20          removed from the N-terminus or C-terminus. Whether a particular polypeptide lacking N- or C-terminal residues of a protein retains such immunogenic activities can readily be determined by routine methods described herein and otherwise known in the art.

          Thus, the invention further includes polypeptide variants which have a functional activity (e.g., biological activity and/or therapeutic activity). In highly preferred  
25          embodiments the invention provides variants of albumin fusion proteins that have a functional activity (e.g., biological activity and/or therapeutic activity) that corresponds to one or more biological and/or therapeutic activities of the Therapeutic protein corresponding to the Therapeutic protein portion of the albumin fusion protein. Such variants include deletions, insertions, inversions, repeats, and substitutions selected  
30          according to general rules known in the art so as have little effect on activity.

          In preferred embodiments, the variants of the invention have conservative substitutions. By "conservative substitutions" is intended swaps within groups such as

replacement of the aliphatic or hydrophobic amino acids Ala, Val, Leu and Ile; replacement of the hydroxyl residues Ser and Thr; replacement of the acidic residues Asp and Glu; replacement of the amide residues Asn and Gln, replacement of the basic residues Lys, Arg, and His; replacement of the aromatic residues Phe, Tyr, and Trp, and  
5 replacement of the small-sized amino acids Ala, Ser, Thr, Met, and Gly.

Guidance concerning how to make phenotypically silent amino acid substitutions is provided, for example, in Bowie et al., "Deciphering the Message in Protein Sequences: Tolerance to Amino Acid Substitutions," *Science* 247:1306-1310 (1990), wherein the authors indicate that there are two main strategies for studying the tolerance of an amino  
10 acid sequence to change.

The first strategy exploits the tolerance of amino acid substitutions by natural selection during the process of evolution. By comparing amino acid sequences in different species, conserved amino acids can be identified. These conserved amino acids are likely important for protein function. In contrast, the amino acid positions where substitutions  
15 have been tolerated by natural selection indicates that these positions are not critical for protein function. Thus, positions tolerating amino acid substitution could be modified while still maintaining biological activity of the protein.

The second strategy uses genetic engineering to introduce amino acid changes at specific positions of a cloned gene to identify regions critical for protein function. For  
20 example, site directed mutagenesis or alanine-scanning mutagenesis (introduction of single alanine mutations at every residue in the molecule) can be used. See Cunningham and Wells, *Science* 244:1081-1085 (1989). The resulting mutant molecules can then be tested for biological activity.

As the authors state, these two strategies have revealed that proteins are  
25 surprisingly tolerant of amino acid substitutions. The authors further indicate which amino acid changes are likely to be permissive at certain amino acid positions in the protein. For example, most buried (within the tertiary structure of the protein) amino acid residues require nonpolar side chains, whereas few features of surface side chains are generally conserved. Moreover, tolerated conservative amino acid substitutions involve  
30 replacement of the aliphatic or hydrophobic amino acids Ala, Val, Leu and Ile; replacement of the hydroxyl residues Ser and Thr; replacement of the acidic residues Asp and Glu; replacement of the amide residues Asn and Gln, replacement of the basic

residues Lys, Arg, and His; replacement of the aromatic residues Phe, Tyr, and Trp, and replacement of the small-sized amino acids Ala, Ser, Thr, Met, and Gly. Besides conservative amino acid substitution, variants of the present invention include (i) polypeptides containing substitutions of one or more of the non-conserved amino acid residues, where the substituted amino acid residues may or may not be one encoded by the genetic code, or (ii) polypeptides containing substitutions of one or more of the amino acid residues having a substituent group, or (iii) polypeptides which have been fused with or chemically conjugated to another compound, such as a compound to increase the stability and/or solubility of the polypeptide (for example, polyethylene glycol), (iv) polypeptide containing additional amino acids, such as, for example, an IgG Fc fusion region peptide, .

Such variant polypeptides are deemed to be within the scope of those skilled in the art from the teachings herein.

For example, polypeptide variants containing amino acid substitutions of charged amino acids with other charged or neutral amino acids may produce proteins with improved characteristics, such as less aggregation. Aggregation of pharmaceutical formulations both reduces activity and increases clearance due to the aggregate's immunogenic activity. See Pinckard et al., Clin. Exp. Immunol. 2:331-340 (1967); Robbins et al., Diabetes 36: 838-845 (1987); Cleland et al., Crit. Rev. Therapeutic Drug Carrier Systems 10:307-377 (1993).

In specific embodiments, the polypeptides of the invention comprise, or alternatively, consist of, fragments or variants of the amino acid sequence of a Therapeutic protein described herein and/or human serum albumin, and/or albumin fusion protein of the invention, wherein the fragments or variants have 1-5, 5-10, 5-25, 5-50, 10-50 or 50-150, amino acid residue additions, substitutions, and/or deletions when compared to the reference amino acid sequence. In preferred embodiments, the amino acid substitutions are conservative. Nucleic acids encoding these polypeptides are also encompassed by the invention.

The polypeptide of the present invention can be composed of amino acids joined to each other by peptide bonds or modified peptide bonds, i.e., peptide isosteres, and may contain amino acids other than the 20 gene-encoded amino acids. The polypeptides may be modified by either natural processes, such as post-translational processing, or by chemical modification techniques which are well known in the art. Such modifications are

well described in basic texts and in more detailed monographs, as well as in a voluminous research literature. Modifications can occur anywhere in a polypeptide, including the peptide backbone, the amino acid side-chains and the amino or carboxyl termini. It will be appreciated that the same type of modification may be present in the same or varying degrees at several sites in a given polypeptide. Also, a given polypeptide may contain many types of modifications. Polypeptides may be branched, for example, as a result of ubiquitination, and they may be cyclic, with or without branching. Cyclic, branched, and branched cyclic polypeptides may result from posttranslation natural processes or may be made by synthetic methods. Modifications include acetylation, acylation, ADP-ribosylation, amidation, covalent attachment of flavin, covalent attachment of a heme moiety, covalent attachment of a nucleotide or nucleotide derivative, covalent attachment of a lipid or lipid derivative, covalent attachment of phosphatidylinositol, cross-linking, cyclization, disulfide bond formation, demethylation, formation of covalent cross-links, formation of cysteine, formation of pyroglutamate, formylation, gamma-carboxylation, glycosylation, GPI anchor formation, hydroxylation, iodination, methylation, myristylation, oxidation, pegylation, proteolytic processing, phosphorylation, prenylation, racemization, selenoylation, sulfation, transfer-RNA mediated addition of amino acids to proteins such as arginylation, and ubiquitination. (See, for instance, PROTEINS - STRUCTURE AND MOLECULAR PROPERTIES, 2nd Ed., T. E. Creighton, W. H. Freeman and Company, New York (1993); POST-TRANSLATIONAL COVALENT MODIFICATION OF PROTEINS, B. C. Johnson, Ed., Academic Press, New York, pgs. 1-12 (1983); Seifter et al., Meth. Enzymol. 182:626-646 (1990); Rattan et al., Ann. N.Y. Acad. Sci. 663:48-62 (1992)).

#### *Functional activity*

"A polypeptide having functional activity" refers to a polypeptide capable of displaying one or more known functional activities associated with the full-length, pro-protein, and/or mature form of a Therapeutic protein. Such functional activities include, but are not limited to, biological activity, antigenicity [ability to bind (or compete with a polypeptide for binding) to an anti-polypeptide antibody], immunogenicity (ability to generate antibody which binds to a specific polypeptide of the invention), ability to form multimers with polypeptides of the invention, and ability to bind to a receptor or ligand for



a polypeptide.

"A polypeptide having biological activity" refers to a polypeptide exhibiting activity similar to, but not necessarily identical to, an activity of a Therapeutic protein of the present invention, including mature forms, as measured in a particular biological assay, with or without dose dependency. In the case where dose dependency does exist, it need not be identical to that of the polypeptide, but rather substantially similar to the dose-dependence in a given activity as compared to the polypeptide of the present invention (i.e., the candidate polypeptide will exhibit greater activity or not more than about 25-fold less and, preferably, not more than about tenfold less activity, and most preferably, not more than about three-fold less activity relative to the polypeptide of the present invention).

In preferred embodiments, an albumin fusion protein of the invention has at least one biological and/or therapeutic activity associated with the Therapeutic protein (or fragment or variant thereof) when it is not fused to albumin.

The albumin fusion proteins of the invention can be assayed for functional activity (e.g., biological activity) using or routinely modifying assays known in the art, as well as assays described herein. Additionally, one of skill in the art may routinely assay fragments of a Therapeutic protein corresponding to a Therapeutic protein portion of an albumin fusion protein of the invention, for activity using assays referenced in its corresponding row of Table 1. Further, one of skill in the art may routinely assay fragments of an albumin protein corresponding to an albumin protein portion of an albumin fusion protein of the invention, for activity using assays known in the art and/or as described in the Examples section below.

For example, in one embodiment where one is assaying for the ability of an albumin fusion protein of the invention to bind or compete with a Therapeutic protein for binding to an anti-Therapeutic polypeptide antibody and/or anti-albumin antibody, various immunoassays known in the art can be used, including but not limited to, competitive and non-competitive assay systems using techniques such as radioimmunoassays, ELISA (enzyme linked immunosorbent assay), "sandwich" immunoassays, immunoradiometric assays, gel diffusion precipitation reactions, immunodiffusion assays, in situ immunoassays (using colloidal gold, enzyme or radioisotope labels, for example), western blots, precipitation reactions, agglutination assays (e.g., gel agglutination assays,

hemagglutination assays), complement fixation assays, immunofluorescence assays, protein A assays, and immunoelectrophoresis assays, etc. In one embodiment, antibody binding is detected by detecting a label on the primary antibody. In another embodiment, the primary antibody is detected by detecting binding of a secondary antibody or reagent to the primary antibody. In a further embodiment, the secondary antibody is labeled. Many means are known in the art for detecting binding in an immunoassay and are within the scope of the present invention.

In a preferred embodiment, where a binding partner (e.g., a receptor or a ligand) of a Therapeutic protein is identified, binding to that binding partner by an albumin fusion protein containing that Therapeutic protein as the Therapeutic protein portion of the fusion can be assayed, e.g., by means well-known in the art, such as, for example, reducing and non-reducing gel chromatography, protein affinity chromatography, and affinity blotting. See generally, Phizicky et al., Microbiol. Rev. 59:94-123 (1995). In another embodiment, the ability of physiological correlates of an albumin fusion protein of the present invention to bind to a substrate(s) of the Therapeutic polypeptide corresponding to the Therapeutic portion of the albumin fusion protein of the invention can be routinely assayed using techniques known in the art.

In an alternative embodiment, where the ability of an albumin fusion protein of the invention to multimerize is being evaluated, association with other components of the multimer can be assayed, e.g., by means well-known in the art, such as, for example, reducing and non-reducing gel chromatography, protein affinity chromatography, and affinity blotting. See generally, Phizicky et al., *supra*.

In preferred embodiments, an albumin fusion protein of the invention comprising all or a portion of an antibody that binds a Therapeutic protein, has at least one biological and/or therapeutic activity (e.g., to specifically bind a polypeptide or epitope) associated with the antibody that binds a Therapeutic protein (or fragment or variant thereof) when it is not fused to albumin. In other preferred embodiments, the biological activity and/or therapeutic activity of an albumin fusion protein of the invention comprising all or a portion of an antibody that binds a Therapeutic protein is the inhibition (i.e. antagonism) or activation (i.e., agonism) of one or more of the biological activities and/or therapeutic activities associated with the polypeptide that is specifically bound by antibody that binds a Therapeutic protein.

Albumin fusion proteins of the invention (e.g., comprising at least a fragment or variant of an antibody that binds a Therapeutic protein) may be characterized in a variety of ways. In particular, albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be assayed for the ability to specifically bind to the same antigens specifically bound by the antibody that binds a Therapeutic protein corresponding to the Therapeutic protein portion of the albumin fusion protein using techniques described herein or routinely modifying techniques known in the art.

Assays for the ability of the albumin fusion proteins of the invention (e.g., comprising at least a fragment or variant of an antibody that binds a Therapeutic protein) to (specifically) bind a specific protein or epitope may be performed in solution (e.g., Houghten, *Bio/Techniques* 13:412-421(1992)), on beads (e.g., Lam, *Nature* 354:82-84 (1991)), on chips (e.g., Fodor, *Nature* 364:555-556 (1993)), on bacteria (e.g., U.S. Patent No. 5,223,409), on spores (e.g., Patent Nos. 5,571,698; 5,403,484; and 5,223,409), on plasmids (e.g., Cull et al., *Proc. Natl. Acad. Sci. USA* 89:1865-1869 (1992)) or on phage (e.g., Scott and Smith, *Science* 249:386-390 (1990); Devlin, *Science* 249:404-406 (1990); Cwirla et al., *Proc. Natl. Acad. Sci. USA* 87:6378-6382 (1990); and Felici, *J. Mol. Biol.* 222:301-310 (1991)) (each of these references is incorporated herein in its entirety by reference). Albumin fusion proteins of the invention comprising at least a fragment or variant of a Therapeutic antibody may also be assayed for their specificity and affinity for a specific protein or epitope using or routinely modifying techniques described herein or otherwise known in the art.

The albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be assayed for cross-reactivity with other antigens (e.g., molecules that have sequence/structure conservation with the molecule(s) specifically bound by the antibody that binds a Therapeutic protein (or fragment or variant thereof) corresponding to the Therapeutic protein portion of the albumin fusion protein of the invention) by any method known in the art.

Immunoassays which can be used to analyze (immunospecific) binding and cross-reactivity include, but are not limited to, competitive and non-competitive assay systems using techniques such as western blots, radioimmunoassays, ELISA (enzyme linked immunosorbent assay), "sandwich" immunoassays, immunoprecipitation assays, precipitin

reactions, gel diffusion precipitin reactions, immunodiffusion assays, agglutination assays, complement-fixation assays, immunoradiometric assays, fluorescent immunoassays, and protein A immunoassays, to name but a few. Such assays are routine and well known in the art (see, *e.g.*, Ausubel et al, eds, 1994, Current Protocols in Molecular Biology, Vol. 1, John Wiley & Sons, Inc., New York, which is incorporated by reference herein in its entirety). Exemplary immunoassays are described briefly below (but are not intended by way of limitation).

Immunoprecipitation protocols generally comprise lysing a population of cells in a lysis buffer such as RIPA buffer (1% NP-40 or Triton X-100, 1% sodium deoxycholate, 0.1% SDS, 0.15 M NaCl, 0.01 M sodium phosphate at pH 7.2, 1% Trasylol) supplemented with protein phosphatase and/or protease inhibitors (*e.g.*, EDTA, PMSF, aprotinin, sodium vanadate), adding the albumin fusion protein of the invention (*e.g.*, comprising at least a fragment or variant of an antibody that binds a Therapeutic protein) to the cell lysate, incubating for a period of time (*e.g.*, 1 to 4 hours) at 40 degrees C, adding sepharose beads coupled to an anti-albumin antibody, for example, to the cell lysate, incubating for about an hour or more at 40 degrees C, washing the beads in lysis buffer and resuspending the beads in SDS/sample buffer. The ability of the albumin fusion protein of the invention to immunoprecipitate a particular antigen can be assessed by, *e.g.*, western blot analysis. One of skill in the art would be knowledgeable as to the parameters that can be modified to increase the binding of the albumin fusion protein to an antigen and decrease the background (*e.g.*, pre-clearing the cell lysate with sepharose beads). For further discussion regarding immunoprecipitation protocols see, *e.g.*, Ausubel et al, eds, 1994, Current Protocols in Molecular Biology, Vol. 1, John Wiley & Sons, Inc., New York at 10.16.1.

Western blot analysis generally comprises preparing protein samples, electrophoresis of the protein samples in a polyacrylamide gel (*e.g.*, 8%- 20% SDS-PAGE depending on the molecular weight of the antigen), transferring the protein sample from the polyacrylamide gel to a membrane such as nitrocellulose, PVDF or nylon, blocking the membrane in blocking solution (*e.g.*, PBS with 3% BSA or non-fat milk), washing the membrane in washing buffer (*e.g.*, PBS-Tween 20), applying the albumin fusion protein of the invention (diluted in blocking buffer) to the membrane, washing the membrane in washing buffer, applying a secondary antibody (which recognizes the albumin fusion protein, *e.g.*, an anti-human serum albumin antibody) conjugated to an enzymatic substrate

(*e.g.*, horseradish peroxidase or alkaline phosphatase) or radioactive molecule (*e.g.*,  $^{32}\text{P}$  or  $^{125}\text{I}$ ) diluted in blocking buffer, washing the membrane in wash buffer, and detecting the presence of the antigen. One of skill in the art would be knowledgeable as to the parameters that can be modified to increase the signal detected and to reduce the background noise. For further discussion regarding western blot protocols see, *e.g.*, Ausubel et al, eds, 1994, Current Protocols in Molecular Biology, Vol. 1, John Wiley & Sons, Inc., New York at 10.8.1.

ELISAs comprise preparing antigen, coating the well of a 96-well microtiter plate with the antigen, washing away antigen that did not bind the wells, adding the albumin fusion protein (*e.g.*, comprising at least a fragment or variant of an antibody that binds a Therapeutic protein) of the invention conjugated to a detectable compound such as an enzymatic substrate (*e.g.*, horseradish peroxidase or alkaline phosphatase) to the wells and incubating for a period of time, washing away unbound or non-specifically bound albumin fusion proteins, and detecting the presence of the albumin fusion proteins specifically bound to the antigen coating the well. In ELISAs the albumin fusion protein does not have to be conjugated to a detectable compound; instead, a second antibody (which recognizes albumin fusion protein) conjugated to a detectable compound may be added to the well. Further, instead of coating the well with the antigen, the albumin fusion protein may be coated to the well. In this case, the detectable molecule could be the antigen conjugated to a detectable compound such as an enzymatic substrate (*e.g.*, horseradish peroxidase or alkaline phosphatase). One of skill in the art would be knowledgeable as to the parameters that can be modified to increase the signal detected as well as other variations of ELISAs known in the art. For further discussion regarding ELISAs see, *e.g.*, Ausubel et al, eds, 1994, Current Protocols in Molecular Biology, Vol. 1, John Wiley & Sons, Inc., New York at 11.2.1.

The binding affinity of an albumin fusion protein to a protein, antigen, or epitope and the off-rate of an albumin fusion protein-protein/antigen/epitope interaction can be determined by competitive binding assays. One example of a competitive binding assay is a radioimmunoassay comprising the incubation of labeled antigen (*e.g.*,  $^3\text{H}$  or  $^{125}\text{I}$ ) with the albumin fusion protein of the invention in the presence of increasing amounts of unlabeled antigen, and the detection of the antibody bound to the labeled antigen. The affinity of the albumin fusion protein of the present invention for a specific protein, antigen, or epitope

and the binding off-rates can be determined from the data by Scatchard plot analysis. Competition with a second protein that binds the same protein, antigen or epitope as the albumin fusion protein, can also be determined using radioimmunoassays. In this case, the protein, antigen or epitope is incubated with an albumin fusion protein of the present invention conjugated to a labeled compound (e.g.,  $^3\text{H}$  or  $^{125}\text{I}$ ) in the presence of increasing amounts of an unlabeled second protein that binds the same protein, antigen, or epitope as the albumin fusion protein of the invention.

In a preferred embodiment, BIAcore kinetic analysis is used to determine the binding on and off rates of albumin fusion proteins of the invention to a protein, antigen or epitope. BIAcore kinetic analysis comprises analyzing the binding and dissociation of albumin fusion proteins, or specific polypeptides, antigens or epitopes from chips with immobilized specific polypeptides, antigens or epitopes or albumin fusion proteins, respectively, on their surface.

Antibodies that bind a Therapeutic protein corresponding to the Therapeutic protein portion of an albumin fusion protein of the invention may also be described or specified in terms of their binding affinity for a given protein or antigen, preferably the antigen which they specifically bind. Preferred binding affinities include those with a dissociation constant or  $K_d$  less than  $5 \times 10^{-2}$  M,  $10^{-2}$  M,  $5 \times 10^{-3}$  M,  $10^{-3}$  M,  $5 \times 10^{-4}$  M,  $10^{-4}$  M. More preferred binding affinities include those with a dissociation constant or  $K_d$  less than  $5 \times 10^{-5}$  M,  $10^{-5}$  M,  $5 \times 10^{-6}$  M,  $10^{-6}$  M,  $5 \times 10^{-7}$  M,  $10^{-7}$  M,  $5 \times 10^{-8}$  M or  $10^{-8}$  M.

Even more preferred binding affinities include those with a dissociation constant or  $K_d$  less than  $5 \times 10^{-9}$  M,  $10^{-9}$  M,  $5 \times 10^{-10}$  M,  $10^{-10}$  M,  $5 \times 10^{-11}$  M,  $10^{-11}$  M,  $5 \times 10^{-12}$  M,  $10^{-12}$  M,  $5 \times 10^{-13}$  M,  $10^{-13}$  M,  $5 \times 10^{-14}$  M,  $10^{-14}$  M,  $5 \times 10^{-15}$  M, or  $10^{-15}$  M. In preferred embodiments, albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, has an affinity for a given protein or epitope similar to that of the corresponding antibody (not fused to albumin) that binds a Therapeutic protein, taking into account the valency of the albumin fusion protein (comprising at least a fragment or variant of an antibody that binds a Therapeutic protein) and the valency of the corresponding antibody. In addition, assays described herein (see Examples and Table 1) and otherwise known in the art may routinely be applied to measure the ability of albumin fusion proteins of the present invention and fragments, variants and derivatives thereof to elicit biological activity and/or Therapeutic activity

(either *in vitro* or *in vivo*) related to either the Therapeutic protein portion and/or albumin portion of the albumin fusion protein of the present invention. Other methods will be known to the skilled artisan and are within the scope of the invention.

## 5        **Albumin**

As described above, an albumin fusion protein of the invention comprises at least a fragment or variant of a Therapeutic protein and at least a fragment or variant of human serum albumin, which are associated with one another, preferably by genetic fusion or chemical conjugation.

10        The terms, human serum albumin (HSA) and human albumin (HA) are used interchangeably herein. The terms, "albumin and "serum albumin" are broader, and encompass human serum albumin (and fragments and variants thereof) as well as albumin from other species (and fragments and variants thereof).

As used herein, "albumin" refers collectively to albumin protein or amino acid  
15        sequence, or an albumin fragment or variant, having one or more functional activities (e.g., biological activities) of albumin. In particular, "albumin" refers to human albumin or fragments thereof (see EP 201 239, EP 322 094 WO 97/24445, WO95/23857) especially the mature form of human albumin as shown in Figure 15 and SEQ ID NO:18, or albumin from other vertebrates or fragments thereof, or analogs or variants of these molecules or  
20        fragments thereof.

In preferred embodiments, the human serum albumin protein used in the albumin fusion proteins of the invention contains one or both of the following sets of point mutations with reference to SEQ ID NO:18: Leu-407 to Ala, Leu-408 to Val, Val-409 to Ala, and Arg-410 to Ala; or Arg-410 to A, Lys-413 to Gln, and Lys-414 to Gln (see, e.g.,  
25        International Publication No. WO95/23857, hereby incorporated in its entirety by reference herein). In even more preferred embodiments, albumin fusion proteins of the invention that contain one or both of above-described sets of point mutations have improved stability/resistance to yeast Yap3p proteolytic cleavage, allowing increased production of recombinant albumin fusion proteins expressed in yeast host cells.

30        As used herein, a portion of albumin sufficient to prolong the therapeutic activity or shelf-life of the Therapeutic protein refers to a portion of albumin sufficient in length or structure to stabilize or prolong the therapeutic activity of the protein so that the shelf life

of the Therapeutic protein portion of the albumin fusion protein is prolonged or extended compared to the shelf-life in the non-fusion state. The albumin portion of the albumin fusion proteins may comprise the full length of the HA sequence as described above or as shown in Figure 15, or may include one or more fragments thereof that are capable of stabilizing or prolonging the therapeutic activity. Such fragments may be of 10 or more amino acids in length or may include about 15, 20, 25, 30, 50, or more contiguous amino acids from the HA sequence or may include part or all of specific domains of HA. For instance, one or more fragments of HA spanning the first two immunoglobulin-like domains may be used.

The albumin portion of the albumin fusion proteins of the invention may be a variant of normal HA. The Therapeutic protein portion of the albumin fusion proteins of the invention may also be variants of the Therapeutic proteins as described herein. The term "variants" includes insertions, deletions and substitutions, either conservative or non conservative, where such changes do not substantially alter one or more of the oncotic, useful ligand-binding and non-immunogenic properties of albumin, or the active site, or active domain which confers the therapeutic activities of the Therapeutic proteins.

In particular, the albumin fusion proteins of the invention may include naturally occurring polymorphic variants of human albumin and fragments of human albumin, for example those fragments disclosed in EP 322 094 (namely HA (Pn), where n is 369 to 419). The albumin may be derived from any vertebrate, especially any mammal, for example human, cow, sheep, or pig. Non-mammalian albumins include, but are not limited to, hen and salmon. The albumin portion of the albumin fusion protein may be from a different animal than the Therapeutic protein portion.

Generally speaking, an HA fragment or variant will be at least 100 amino acids long, preferably at least 150 amino acids long. The HA variant may consist of or alternatively comprise at least one whole domain of HA, for example domains 1 (amino acids 1-194 of SEQ ID NO:18), 2 (amino acids 195-387 of SEQ ID NO:18), 3 (amino acids 388-585 of SEQ ID NO:18), 1 + 2 (1-387 of SEQ ID NO:18), 2 + 3 (195-585 of SEQ ID NO:18) or 1 + 3 (amino acids 1-194 of SEQ ID NO:18 + amino acids 388-585 of SEQ ID NO:18). Each domain is itself made up of two homologous subdomains namely 1-105, 120-194, 195-291, 316-387, 388-491 and 512-585, with flexible inter-subdomain linker regions comprising residues Lys106 to Glu119, Glu292 to Val315 and Glu492 to



Ala511.

Preferably, the albumin portion of an albumin fusion protein of the invention comprises at least one subdomain or domain of HA or conservative modifications thereof.

If the fusion is based on subdomains, some or all of the adjacent linker is preferably used  
5 to link to the Therapeutic protein moiety.

*Antibodies that Specifically bind Therapeutic proteins are also Therapeutic proteins*

The present invention also encompasses albumin fusion proteins that comprise at  
10 least a fragment or variant of an antibody that specifically binds a Therapeutic protein disclosed in Table 1. It is specifically contemplated that the term "Therapeutic protein" encompasses antibodies that bind a Therapeutic protein (e.g., as Described in column I of Table 1) and fragments and variants thereof. Thus an albumin fusion protein of the invention may contain at least a fragment or variant of a Therapeutic protein, and/or at  
15 least a fragment or variant of an an antibody that binds a Therapeutic protein.

*Antibody structure and background*

The basic antibody structural unit is known to comprise a tetramer. Each tetramer is  
20 composed of two identical pairs of polypeptide chains, each pair having one "light" (about 25 kDa) and one "heavy" chain (about 50-70 kDa). The amino-terminal portion of each chain includes a variable region of about 100 to 110 or more amino acids primarily responsible for antigen recognition. The carboxy-terminal portion of each chain defines a constant region primarily responsible for effector function. Human light chains are  
25 classified as kappa and lambda light chains. Heavy chains are classified as mu, delta, gamma, alpha, or epsilon, and define the antibody's isotype as IgM, IgD, IgG, IgA, and IgE, respectively. See generally, *Fundamental Immunology* Chapters 3-5 (Paul, W., ed., 4th ed. Raven Press, N.Y. (1998)) (incorporated by reference in its entirety for all purposes). The variable regions of each light/heavy chain pair form the antibody binding  
30 site.

Thus, an intact IgG antibody has two binding sites. Except in bifunctional or bispecific antibodies, the two binding sites are the same.

The chains all exhibit the same general structure of relatively conserved framework regions (FR) joined by three hypervariable regions, also called complementarity determining regions or CDRs. The CDR regions, in general, are the portions of the antibody which make contact with the antigen and determine its specificity. The CDRs from the heavy and the light chains of each pair are aligned by the framework regions, enabling binding to a specific epitope. From N-terminal to C-terminal, both light and heavy chains variable regions comprise the domains FR1, CDR1, FR2, CDR2, FR3, CDR3 and FR4. The variable regions are connected to the heavy or light chain constant region. The assignment of amino acids to each domain is in accordance with the definitions of Kabat *Sequences of Proteins of Immunological Interest* (National Institutes of Health, Bethesda, Md. (1987 and 1991)), or Chothia & Lesk *J Mol. Biol.* 196:901-917 (1987); Chothia et al. *Nature* 342:878-883 (1989).

As used herein, "antibody" refers to immunoglobulin molecules and immunologically active portions of immunoglobulin molecules, i.e., molecules that contain an antigen binding site that specifically binds an antigen (e.g., a molecule containing one or more CDR regions of an antibody). Antibodies that may correspond to a Therapeutic protein portion of an albumin fusion protein include, but are not limited to, monoclonal, multispecific, human, humanized or chimeric antibodies, single chain antibodies (e.g., single chain Fvs), Fab fragments, F(ab') fragments, fragments produced by a Fab expression library, anti-idiotypic (anti-Id) antibodies (including, e.g., anti-Id antibodies specific to antibodies of the invention), and epitope-binding fragments of any of the above (e.g., VH domains, VL domains, or one or more CDR regions).

#### *Antibodies that bind Therapeutic Proteins*

The present invention encompasses albumin fusion proteins that comprise at least a fragment or variant of an antibody that binds a Therapeutic Protein (e.g., as disclosed in Table 1) or fragment or variant thereof.

Antibodies that bind a Therapeutic protein (or fragment or variant thereof) may be from any animal origin, including birds and mammals. Preferably, the antibodies are human, murine (e.g., mouse and rat), donkey, sheep, rabbit, goat, guinea pig, camel, horse, or chicken antibodies. Most preferably, the antibodies are human antibodies. As used herein, "human" antibodies include antibodies having the amino acid sequence of a human

immunoglobulin and include antibodies isolated from human immunoglobulin libraries and xenomice or other organisms that have been genetically engineered to produce human antibodies.

The antibody molecules that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention can be of any type (e.g., IgG, IgE, IgM, IgD, IgA and IgY), class (e.g., IgG1, IgG2, IgG3, IgG4, IgA1 and IgA2) or subclass of immunoglobulin molecule. In preferred embodiments, the antibody molecules that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention are IgG1. In other preferred embodiments, the immunoglobulin molecules that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention are IgG2. In other preferred embodiments, the immunoglobulin molecules that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention are IgG4.

Most preferably the antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention are human antigen-binding antibody fragments of the present invention and include, but are not limited to, Fab, Fab' and F(ab')<sub>2</sub>, Fd, single-chain Fvs (scFv), single-chain antibodies, disulfide-linked Fvs (sdFv) and fragments comprising either a VL or VH domain. Antigen-binding antibody fragments, including single-chain antibodies, may comprise the variable region(s) alone or in combination with the entirety or a portion of the following: hinge region, CH1, CH2, and CH3 domains.

The antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention may be monospecific, bispecific, trispecific or of greater multispecificity. Multispecific antibodies may be specific for different epitopes of a Therapeutic protein or may be specific for both a Therapeutic protein as well as for a heterologous epitope, such as a heterologous polypeptide or solid support material. See, e.g., PCT publications WO 93/17715; WO 92/08802; WO 91/00360; WO 92/05793; Tutt, et al., J. Immunol. 147:60-69 (1991); U.S. Patent Nos. 4,474,893; 4,714,681; 4,925,648; 5,573,920; 5,601,819; Kostelny et al., J. Immunol. 148:1547-1553 (1992).

Antibodies that bind a Therapeutic protein (or fragment or variant thereof) may be

bispecific or bifunctional which means that the antibody is an artificial hybrid antibody having two different heavy/light chain pairs and two different binding sites. Bispecific antibodies can be produced by a variety of methods including fusion of hybridomas or linking of Fab' fragments. *See, e.g.,* Songsivilai & Lachmann *Clin. Exp. Immunol.* 79: 315-321 (1990), Kostelny et al. *J Immunol.* 148:1547-1553 (1992). In addition, bispecific antibodies may be formed as "diabodies" (Holliger et al. "Diabodies: small bivalent and bispecific antibody fragments" *PNAS USA* 90:6444-6448 (1993)) or "Janusins" (Traunecker et al. "Bispecific single chain molecules (Janusins) target cytotoxic lymphocytes on HIV infected cells" *EMBO J* 10:3655-3659 (1991) and Traunecker et al. "Janusin: new molecular design for bispecific reagents" *Int J Cancer Suppl* 7:51-52 (1992)).

The present invention also provides albumin fusion proteins that comprise, fragments or variants (including derivatives) of an antibody described herein or known elsewhere in the art. Standard techniques known to those of skill in the art can be used to introduce mutations in the nucleotide sequence encoding a molecule of the invention, including, for example, site-directed mutagenesis and PCR-mediated mutagenesis which result in amino acid substitutions. Preferably, the variants (including derivatives) encode less than 50 amino acid substitutions, less than 40 amino acid substitutions, less than 30 amino acid substitutions, less than 25 amino acid substitutions, less than 20 amino acid substitutions, less than 15 amino acid substitutions, less than 10 amino acid substitutions, less than 5 amino acid substitutions, less than 4 amino acid substitutions, less than 3 amino acid substitutions, or less than 2 amino acid substitutions relative to the reference VH domain, VHCDR1, VHCDR2, VHCDR3, VL domain, VLCDR1, VLCDR2, or VLCDR3. In specific embodiments, the variants encode substitutions of VHCDR3. In a preferred embodiment, the variants have conservative amino acid substitutions at one or more predicted non-essential amino acid residues.

Antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention may be described or specified in terms of the epitope(s) or portion(s) of a Therapeutic protein which they recognize or specifically bind. Antibodies which specifically bind a Therapeutic protein or a specific epitope of a Therapeutic protein may also be excluded. Therefore, the present invention encompasses antibodies that specifically bind Therapeutic

proteins, and allows for the exclusion of the same. In preferred embodiments, albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, binds the same epitopes as the .

Antibodies that bind to a Therapeutic protein and that may correspond to a  
5 Therapeutic protein portion of an albumin fusion protein of the invention may also be described or specified in terms of their cross-reactivity. Antibodies that do not bind any other analog, ortholog, or homolog of a Therapeutic protein are included. Antibodies that bind polypeptides with at least 95%, at least 90%, at least 85%, at least 80%, at least 75%, at least 70%, at least 65%, at least 60%, at least 55%, and at least 50% identity (as  
10 calculated using methods known in the art and described herein) to a Therapeutic protein are also included in the present invention. In specific embodiments, antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention cross-react with murine, rat and/or rabbit homologs of human proteins and the corresponding epitopes thereof. Antibodies that do  
15 not bind polypeptides with less than 95%, less than 90%, less than 85%, less than 80%, less than 75%, less than 70%, less than 65%, less than 60%, less than 55%, and less than 50% identity (as calculated using methods known in the art and described herein) to a Therapeutic protein are also included in the present invention. In a specific embodiment, the above-described cross-reactivity is with respect to any single specific antigenic or  
20 immunogenic polypeptide, or combination(s) of 2, 3, 4, 5, or more of the specific antigenic and/or immunogenic polypeptides disclosed herein. In preferred embodiments, albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, has similar or substantially identical cross reactivity characteristics compared to the .

25 Further included in the present invention are antibodies which bind polypeptides encoded by polynucleotides which hybridize to a polynucleotide encoding a Therapeutic protein under stringent hybridization conditions (as described herein). Antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention may also be described or specified in terms of  
30 their binding affinity to a polypeptide of the invention. Preferred binding affinities include those with a dissociation constant or  $K_d$  less than  $5 \times 10^{-2}$  M,  $10^{-2}$  M,  $5 \times 10^{-3}$  M,  $10^{-3}$  M,  $5 \times 10^{-4}$  M,  $10^{-4}$  M. More preferred binding affinities include those with a dissociation

constant or  $K_d$  less than  $5 \times 10^{-5}$  M,  $10^{-5}$  M,  $5 \times 10^{-6}$  M,  $10^{-6}$  M,  $5 \times 10^{-7}$  M,  $10^{-7}$  M,  $5 \times 10^{-8}$  M or  $10^{-8}$  M. Even more preferred binding affinities include those with a dissociation constant or  $K_d$  less than  $5 \times 10^{-9}$  M,  $10^{-9}$  M,  $5 \times 10^{-10}$  M,  $10^{-10}$  M,  $5 \times 10^{-11}$  M,  $10^{-11}$  M,  $5 \times 10^{-12}$  M,  $10^{-12}$  M,  $5 \times 10^{-13}$  M,  $10^{-13}$  M,  $5 \times 10^{-14}$  M,  $10^{-14}$  M,  $5 \times 10^{-15}$  M, or  $10^{-15}$  M. In

5 preferred embodiments, albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, has an affinity for a given protein or epitope similar to that of the corresponding antibody (not fused to albumin) that binds a Therapeutic protein, taking into account the valency of the albumin fusion protein (comprising at least a fragment or variant of an antibody that binds a Therapeutic protein)  
10 and the valency of the corresponding antibody.

The invention also provides antibodies that competitively inhibit binding of an antibody to an epitope of a Therapeutic protein as determined by any method known in the art for determining competitive binding, for example, the immunoassays described herein.

In preferred embodiments, the antibody competitively inhibits binding to the epitope by at  
15 least 95%, at least 90%, at least 85 %, at least 80%, at least 75%, at least 70%, at least 60%, or at least 50%. In preferred embodiments, albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, competitively inhibits binding of an antibody to an epitope of a Therapeutic protein as well as the , competitively inhibits binding of an antibody to an epitope of a Therapeutic protein. In  
20 other preferred embodiments, albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, competitively inhibits binding of the to an epitope of a Therapeutic protein by at least 95%, at least 90%, at least 85 %, at least 80%, at least 75%, at least 70%, at least 60%, or at least 50%:

Antibodies that bind to a Therapeutic protein and that may correspond to a  
25 Therapeutic protein portion of an albumin fusion protein of the invention may act as agonists or antagonists of the Therapeutic protein. For example, the present invention includes antibodies which disrupt the receptor/ligand interactions with the polypeptides of the invention either partially or fully. The invention features both receptor-specific antibodies and ligand-specific antibodies. The invention also features receptor-specific  
30 antibodies which do not prevent ligand binding but prevent receptor activation. Receptor activation (i.e., signaling) may be determined by techniques described herein or otherwise known in the art. For example, receptor activation can be determined by detecting the

phosphorylation (e.g., tyrosine or serine/threonine) of the receptor or its substrate by immunoprecipitation followed by western blot analysis (for example, as described *supra*).

In specific embodiments, antibodies are provided that inhibit ligand activity or receptor activity by at least 95%, at least 90%, at least 85%, at least 80%, at least 75%, at least 70%, at least 60%, or at least 50% of the activity in absence of the antibody. In preferred embodiments, albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, has similar or substantially similar characteristics with regard to preventing ligand binding and/or preventing receptor activation compared to the .

The invention also features receptor-specific antibodies which both prevent ligand binding and receptor activation as well as antibodies that recognize the receptor-ligand complex, and, preferably, do not specifically recognize the unbound receptor or the unbound ligand. Likewise, included in the invention are neutralizing antibodies which bind the ligand and prevent binding of the ligand to the receptor, as well as antibodies which bind the ligand, thereby preventing receptor activation, but do not prevent the ligand from binding the receptor. Further included in the invention are antibodies which activate the receptor. These antibodies may act as receptor agonists, i.e., potentiate or activate either all or a subset of the biological activities of the ligand-mediated receptor activation, for example, by inducing dimerization of the receptor. The antibodies may be specified as agonists, antagonists or inverse agonists for biological activities comprising the specific biological activities of the Therapeutic proteins (e.g. as disclosed in Table 1). The above antibody agonists can be made using methods known in the art. See, e.g., PCT publication WO 96/40281; U.S. Patent No. 5,811,097; Deng et al., Blood 92(6):1981-1988 (1998); Chen et al., Cancer Res. 58(16):3668-3678 (1998); Harrop et al., J. Immunol. 161(4):1786-1794 (1998); Zhu et al., Cancer Res. 58(15):3209-3214 (1998); Yoon et al., J. Immunol. 160(7):3170-3179 (1998); Prat et al., J. Cell. Sci. 111(Pt2):237-247 (1998); Pitard et al., J. Immunol. Methods 205(2):177-190 (1997); Liautard et al., Cytokine 9(4):233-241 (1997); Carlson et al., J. Biol. Chem. 272(17):11295-11301 (1997); Taryman et al., Neuron 14(4):755-762 (1995); Muller et al., Structure 6(9):1153-1167 (1998); Bartunek et al., Cytokine 8(1):14-20 (1996) (which are all incorporated by reference herein in their entireties). In preferred embodiments, albumin fusion proteins comprising

at least a fragment or variant of an antibody that binds a Therapeutic protein, have similar or substantially identical agonist or antagonist properties as the .

Antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention may be used, for example, to purify, detect, and target Therapeutic proteins, including both in *in vitro* and *in vivo* diagnostic and therapeutic methods. For example, the antibodies have utility in immunoassays for qualitatively and quantitatively measuring levels of the Therapeutic protein in biological samples. See, e.g., Harlow et al., *Antibodies: A Laboratory Manual*, (Cold Spring Harbor Laboratory Press, 2nd ed. 1988); incorporated by reference herein in its entirety. Likewise, albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, may be used, for example, to purify, detect, and target Therapeutic proteins, including both in *in vitro* and *in vivo* diagnostic and therapeutic methods.

Antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein include derivatives that are modified, i.e., by the covalent attachment of any type of molecule to the antibody. For example, but not by way of limitation, the antibody derivatives include antibodies that have been modified, e.g., by glycosylation, acetylation, pegylation, phosphorylation, amidation, derivatization by known protecting/blocking groups, proteolytic cleavage, linkage to a cellular ligand or other protein, etc. Any of numerous chemical modifications may be carried out by known techniques, including, but not limited to specific chemical cleavage, acetylation, formylation, metabolic synthesis of tunicamycin, etc. Additionally, the derivative may contain one or more non-classical amino acids. Albumin fusion proteins of the invention may also be modified as described above.

#### *Methods of Producing Antibodies that bind Therapeutic Proteins*

The antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention may be generated by any suitable method known in the art. Polyclonal antibodies to an antigen-of-interest can be produced by various procedures well known in the art. For example, a Therapeutic protein may be administered to various host animals including, but not limited to, rabbits, mice, rats, etc. to induce the production of sera containing polyclonal



antibodies specific for the antigen. Various adjuvants may be used to increase the immunological response, depending on the host species, and include but are not limited to, Freund's (complete and incomplete), mineral gels such as aluminum hydroxide, surface active substances such as lysolecithin, pluronic polyols, polyanions, peptides, oil emulsions, keyhole limpet hemocyanins, dinitrophenol, and potentially useful human adjuvants such as BCG (bacille Calmette-Guerin) and corynebacterium parvum. Such adjuvants are also well known in the art.

Monoclonal antibodies can be prepared using a wide variety of techniques known in the art including the use of hybridoma, recombinant, and phage display technologies, or a combination thereof. For example, monoclonal antibodies can be produced using hybridoma techniques including those known in the art and taught, for example, in Harlow et al., *Antibodies: A Laboratory Manual*, (Cold Spring Harbor Laboratory Press, 2nd ed. 1988); Hammerling, et al., in: *Monoclonal Antibodies and T-Cell Hybridomas* 563-681 (Elsevier, N.Y., 1981) (said references incorporated by reference in their entireties). The term "monoclonal antibody" as used herein is not limited to antibodies produced through hybridoma technology. The term "monoclonal antibody" refers to an antibody that is derived from a single clone, including any eukaryotic, prokaryotic, or phage clone, and not the method by which it is produced.

Methods for producing and screening for specific antibodies using hybridoma technology are routine and well known in the art. In a non-limiting example, mice can be immunized with a Therapeutic protein or fragment or variant thereof or a cell expressing such a Therapeutic protein or fragment or variant thereof. Once an immune response is detected, e.g., antibodies specific for the antigen are detected in the mouse serum, the mouse spleen is harvested and splenocytes isolated. The splenocytes are then fused by well known techniques to any suitable myeloma cells, for example cells from cell line SP20 available from the ATCC. Hybridomas are selected and cloned by limited dilution. The hybridoma clones are then assayed by methods known in the art for cells that secrete antibodies capable of binding a polypeptide of the invention. Ascites fluid, which generally contains high levels of antibodies, can be generated by immunizing mice with positive hybridoma clones.

Accordingly, the present invention provides methods of generating monoclonal antibodies as well as antibodies produced by the method comprising culturing a hybridoma

cell secreting an antibody wherein, preferably, the hybridoma is generated by fusing splenocytes isolated from a mouse immunized with an antigen of the invention with myeloma cells and then screening the hybridomas resulting from the fusion for hybridoma clones that secrete an antibody able to bind a polypeptide of the invention.

5           Another well known method for producing both polyclonal and monoclonal human B cell lines is transformation using Epstein Barr Virus (EBV). Protocols for generating EBV-transformed B cell lines are commonly known in the art, such as, for example, the protocol outlined in Chapter 7.22 of Current Protocols in Immunology, Coligan et al., Eds., 1994, John Wiley & Sons, NY, which is hereby incorporated in its entirety by  
10 reference. The source of B cells for transformation is commonly human peripheral blood, but B cells for transformation may also be derived from other sources including, but not limited to, lymph nodes, tonsil, spleen, tumor tissue, and infected tissues. Tissues are generally made into single cell suspensions prior to EBV transformation. Additionally, steps may be taken to either physically remove or inactivate T cells (e.g., by treatment with  
15 cyclosporin A) in B cell-containing samples, because T cells from individuals seropositive for anti-EBV antibodies can suppress B cell immortalization by EBV.

          In general, the sample containing human B cells is inoculated with EBV, and cultured for 3-4 weeks. A typical source of EBV is the culture supernatant of the B95-8 cell line (ATCC #VR-1492). Physical signs of EBV transformation can generally be seen  
20 towards the end of the 3-4 week culture period. By phase-contrast microscopy, transformed cells may appear large, clear, hairy and tend to aggregate in tight clusters of cells. Initially, EBV lines are generally polyclonal. However, over prolonged periods of cell cultures, EBV lines may become monoclonal or polyclonal as a result of the selective outgrowth of particular B cell clones. Alternatively, polyclonal EBV transformed lines  
25 may be subcloned (e.g., by limiting dilution culture) or fused with a suitable fusion partner and plated at limiting dilution to obtain monoclonal B cell lines. Suitable fusion partners for EBV transformed cell lines include mouse myeloma cell lines (e.g., SP2/0, X63-Ag8.653), heteromyeloma cell lines (human x mouse; e.g., SPAM-8, SBC-H20, and CB-F7), and human cell lines (e.g., GM 1500, SKO-007, RPMI 8226, and KR-4). Thus, the  
30 present invention also provides a method of generating polyclonal or monoclonal human antibodies against polypeptides of the invention or fragments thereof, comprising EBV-transformation of human B cells.

Antibody fragments which recognize specific epitopes may be generated by known techniques. For example, Fab and F(ab')<sub>2</sub> fragments of the invention may be produced by proteolytic cleavage of immunoglobulin molecules, using enzymes such as papain (to produce Fab fragments) or pepsin (to produce F(ab')<sub>2</sub> fragments). F(ab')<sub>2</sub> fragments  
5 contain the variable region, the light chain constant region and the CH1 domain of the heavy chain.

For example, antibodies that bind to a Therapeutic protein can also be generated using various phage display methods known in the art. In phage display methods, functional antibody domains are displayed on the surface of phage particles which carry  
10 the polynucleotide sequences encoding them. In a particular embodiment, such phage can be utilized to display antigen binding domains expressed from a repertoire or combinatorial antibody library (e.g., human or murine). Phage expressing an antigen binding domain that binds the antigen of interest can be selected or identified with antigen, e.g., using labeled antigen or antigen bound or captured to a solid surface or bead. Phage  
15 used in these methods are typically filamentous phage including fd and M13 binding domains expressed from phage with Fab, Fv or disulfide stabilized Fv antibody domains recombinantly fused to either the phage gene III or gene VIII protein. Examples of phage display methods that can be used to make antibodies that bind to a Therapeutic protein include those disclosed in Brinkman et al., J. Immunol. Methods 182:41-50 (1995); Ames  
20 et al., J. Immunol. Methods 184:177-186 (1995); Kettleborough et al., Eur. J. Immunol. 24:952-958 (1994); Persic et al., Gene 187 9-18 (1997); Burton et al., Advances in Immunology 57:191-280 (1994); PCT application No. PCT/GB91/01134; PCT publications WO 90/02809; WO 91/10737; WO 92/01047; WO 92/18619; WO 93/11236; WO 95/15982; WO 95/20401; and U.S. Patent Nos. 5,698,426; 5,223,409;  
25 5,403,484; 5,580,717; 5,427,908; 5,750,753; 5,821,047; 5,571,698; 5,427,908; 5,516,637; 5,780,225; 5,658,727; 5,733,743 and 5,969,108; each of which is incorporated herein by reference in its entirety.

As described in the above references, after phage selection, the antibody coding regions from the phage can be isolated and used to generate whole antibodies, including  
30 human antibodies, or any other desired antigen binding fragment, and expressed in any desired host, including mammalian cells, insect cells, plant cells, yeast, and bacteria, e.g., as described in detail below. For example, techniques to recombinantly produce Fab, Fab'

and F(ab')<sub>2</sub> fragments can also be employed using methods known in the art such as those disclosed in PCT publication WO 92/22324; Mullinax et al., *BioTechniques* 12(6):864-869 (1992); and Sawai et al., *AJRI* 34:26-34 (1995); and Better et al., *Science* 240:1041-1043 (1988) (said references incorporated by reference in their entireties).

5        Examples of techniques which can be used to produce single-chain Fvs and antibodies include those described in U.S. Patents 4,946,778 and 5,258,498; Huston et al., *Methods in Enzymology* 203:46-88 (1991); Shu et al., *PNAS* 90:7995-7999 (1993); and Skerra et al., *Science* 240:1038-1040 (1988). For some uses, including *in vivo* use of  
10        humanized, or human antibodies. A chimeric antibody is a molecule in which different portions of the antibody are derived from different animal species, such as antibodies having a variable region derived from a murine monoclonal antibody and a human immunoglobulin constant region. Methods for producing chimeric antibodies are known in the art. See e.g., Morrison, *Science* 229:1202 (1985); Oi et al., *BioTechniques* 4:214  
15        (1986); Gillies et al., (1989) *J. Immunol. Methods* 125:191-202; U.S. Patent Nos. 5,807,715; 4,816,567; and 4,816,397, which are incorporated herein by reference in their entirety. Humanized antibodies are antibody molecules from non-human species antibody that binds the desired antigen having one or more complementarity determining regions (CDRs) from the non-human species and a framework regions from a human  
20        immunoglobulin molecule. Often, framework residues in the human framework regions will be substituted with the corresponding residue from the CDR donor antibody to alter, preferably improve, antigen binding. These framework substitutions are identified by methods well known in the art, e.g., by modeling of the interactions of the CDR and framework residues to identify framework residues important for antigen binding and  
25        sequence comparison to identify unusual framework residues at particular positions. (See, e.g., Queen et al., U.S. Patent No. 5,585,089; Riechmann et al., *Nature* 332:323 (1988), which are incorporated herein by reference in their entireties.) Antibodies can be humanized using a variety of techniques known in the art including, for example, CDR-grafting (EP 239,400; PCT publication WO 91/09967; U.S. Patent Nos. 5,225,539;  
30        5,530,101; and 5,585,089), veneering or resurfacing (EP 592,106; EP 519,596; Padlan, *Molecular Immunology* 28(4/5):489-498 (1991); Studnicka et al., *Protein Engineering*

7(6):805-814 (1994); Roguska. et al., PNAS 91:969-973 (1994)), and chain shuffling (U.S. Patent No. 5,565,332).

Completely human antibodies are particularly desirable for therapeutic treatment of human patients. Human antibodies can be made by a variety of methods known in the art including phage display methods described above using antibody libraries derived from human immunoglobulin sequences. See also, U.S. Patent Nos. 4,444,887 and 4,716,111; and PCT publications WO 98/46645, WO 98/50433, WO 98/24893, WO 98/16654, WO 96/34096, WO 96/33735, and WO 91/10741; each of which is incorporated herein by reference in its entirety.

Human antibodies can also be produced using transgenic mice which are incapable of expressing functional endogenous immunoglobulins, but which can express human immunoglobulin genes. For example, the human heavy and light chain immunoglobulin gene complexes may be introduced randomly or by homologous recombination into mouse embryonic stem cells. Alternatively, the human variable region, constant region, and diversity region may be introduced into mouse embryonic stem cells in addition to the human heavy and light chain genes. The mouse heavy and light chain immunoglobulin genes may be rendered non-functional separately or simultaneously with the introduction of human immunoglobulin loci by homologous recombination. In particular, homozygous deletion of the JH region prevents endogenous antibody production. The modified embryonic stem cells are expanded and microinjected into blastocysts to produce chimeric mice. The chimeric mice are then bred to produce homozygous offspring which express human antibodies. The transgenic mice are immunized in the normal fashion with a selected antigen, e.g., all or a portion of a polypeptide of the invention. Monoclonal antibodies directed against the antigen can be obtained from the immunized, transgenic mice using conventional hybridoma technology. The human immunoglobulin transgenes harbored by the transgenic mice rearrange during B cell differentiation, and subsequently undergo class switching and somatic mutation. Thus, using such a technique, it is possible to produce therapeutically useful IgG, IgA, IgM and IgE antibodies. For an overview of this technology for producing human antibodies, see Lonberg and Huszar, Int. Rev. Immunol. 13:65-93 (1995). For a detailed discussion of this technology for producing human antibodies and human monoclonal antibodies and protocols for producing such antibodies, see, e.g., PCT publications WO 98/24893; WO 92/01047; WO 96/34096; WO

96/33735; European Patent No. 0 598 877; U.S. Patent Nos. 5,413,923; 5,625,126; 5,633,425; 5,569,825; 5,661,016; 5,545,806; 5,814,318; 5,885,793; 5,916,771; 5,939,598; 6,075,181; and 6,114,598, which are incorporated by reference herein in their entirety. In addition, companies such as Abgenix, Inc. (Freemont, CA) and Genpharm (San Jose, CA) can be engaged to provide human antibodies directed against a selected antigen using technology similar to that described above.

Completely human antibodies which recognize a selected epitope can be generated using a technique referred to as "guided selection." In this approach a selected non-human monoclonal antibody, e.g., a mouse antibody, is used to guide the selection of a completely human antibody recognizing the same epitope. (Jespers et al., Bio/technology 12:899-903 (1988)).

#### *Polynucleotides Encoding Antibodies*

The invention further provides polynucleotides comprising a nucleotide sequence encoding an antibody and fragments thereof. The invention also encompasses polynucleotides that hybridize under stringent or alternatively, under lower stringency hybridization conditions, e.g., as defined *supra*, to polynucleotides that encode an antibody, preferably, that specifically binds to a Therapeutic protein, and more preferably, an antibody that binds to a polypeptide having the amino acid sequence of a "therapeutic protein X as disclosed in the "Exemplary Identifier" column of Table 1.

The polynucleotides may be obtained, and the nucleotide sequence of the polynucleotides determined, by any method known in the art. For example, if the nucleotide sequence of the antibody is known, a polynucleotide encoding the antibody may be assembled from chemically synthesized oligonucleotides (e.g., as described in Kutmeier et al., BioTechniques 17:242 (1994)), which, briefly, involves the synthesis of overlapping oligonucleotides containing portions of the sequence encoding the antibody, annealing and ligating of those oligonucleotides, and then amplification of the ligated oligonucleotides by PCR.

Alternatively, a polynucleotide encoding an antibody may be generated from nucleic acid from a suitable source. If a clone containing a nucleic acid encoding a particular antibody is not available, but the sequence of the antibody molecule is known, a nucleic acid encoding the immunoglobulin may be chemically synthesized or obtained

from a suitable source (e.g., an antibody cDNA library, or a cDNA library generated from, or nucleic acid, preferably poly A+ RNA, isolated from, any tissue or cells expressing the antibody, such as hybridoma cells selected to express an antibody) by PCR amplification using synthetic primers hybridizable to the 3' and 5' ends of the sequence or by cloning  
5 using an oligonucleotide probe specific for the particular gene sequence to identify, e.g., a cDNA clone from a cDNA library that encodes the antibody. Amplified nucleic acids generated by PCR may then be cloned into replicable cloning vectors using any method well known in the art (See Example 60).

Once the nucleotide sequence and corresponding amino acid sequence of the  
10 antibody is determined, the nucleotide sequence of the antibody may be manipulated using methods well known in the art for the manipulation of nucleotide sequences, e.g., recombinant DNA techniques, site directed mutagenesis, PCR, etc. (see, for example, the techniques described in Sambrook et al., 1990, Molecular Cloning, A Laboratory Manual, 2d Ed., Cold Spring Harbor Laboratory, Cold Spring Harbor, NY and Ausubel et al., eds.,  
15 1998, Current Protocols in Molecular Biology, John Wiley & Sons, NY, which are both incorporated by reference herein in their entirety), to generate antibodies having a different amino acid sequence, for example to create amino acid substitutions, deletions, and/or insertions.

In a specific embodiment, the amino acid sequence of the heavy and/or light chain  
20 variable domains may be inspected to identify the sequences of the complementarity determining regions (CDRs) by methods that are well known in the art, e.g., by comparison to known amino acid sequences of other heavy and light chain variable regions to determine the regions of sequence hypervariability. Using routine recombinant DNA techniques, one or more of the CDRs may be inserted within framework regions, e.g., into  
25 human framework regions to humanize a non-human antibody, as described *supra*. The framework regions may be naturally occurring or consensus framework regions, and preferably human framework regions (see, e.g., Chothia et al., J. Mol. Biol. 278: 457-479 (1998) for a listing of human framework regions). Preferably, the polynucleotide generated by the combination of the framework regions and CDRs encodes an antibody  
30 that specifically binds a polypeptide of the invention. Preferably, as discussed *supra*, one or more amino acid substitutions may be made within the framework regions, and, preferably, the amino acid substitutions improve binding of the antibody to its antigen.

Additionally, such methods may be used to make amino acid substitutions or deletions of one or more variable region cysteine residues participating in an intrachain disulfide bond to generate antibody molecules lacking one or more intrachain disulfide bonds. Other alterations to the polynucleotide are encompassed by the present invention and within the skill of the art.

In addition, techniques developed for the production of "chimeric antibodies" (Morrison et al., Proc. Natl. Acad. Sci. 81:851-855 (1984); Neuberger et al., Nature 312:604-608 (1984); Takeda et al., Nature 314:452-454 (1985)) by splicing genes from a mouse antibody molecule of appropriate antigen specificity together with genes from a human antibody molecule of appropriate biological activity can be used. As described *supra*, a chimeric antibody is a molecule in which different portions are derived from different animal species, such as those having a variable region derived from a murine mAb and a human immunoglobulin constant region, e.g., humanized antibodies.

Alternatively, techniques described for the production of single chain antibodies (U.S. Patent No. 4,946,778; Bird, Science 242:423-42 (1988); Huston et al., Proc. Natl. Acad. Sci. USA 85:5879-5883 (1988); and Ward et al., Nature 334:544-54 (1989)) can be adapted to produce single chain antibodies. Single chain antibodies are formed by linking the heavy and light chain fragments of the Fv region via an amino acid bridge, resulting in a single chain polypeptide. Techniques for the assembly of functional Fv fragments in *E. coli* may also be used (Skerra et al., Science 242:1038-1041 (1988)).

#### *Recombinant Expression of Antibodies*

Recombinant expression of an antibody, or fragment, derivative or analog thereof, (e.g., a heavy or light chain of an antibody or a single chain antibody), requires construction of an expression vector containing a polynucleotide that encodes the antibody. Once a polynucleotide encoding an antibody molecule or a heavy or light chain of an antibody, or portion thereof (preferably containing the heavy or light chain variable domain), of the invention has been obtained, the vector for the production of the antibody molecule may be produced by recombinant DNA technology using techniques well known in the art. Thus, methods for preparing a protein by expressing a polynucleotide containing an antibody encoding nucleotide sequence are described herein. Methods which are well known to those skilled in the art can be used to construct expression



vectors containing antibody coding sequences and appropriate transcriptional and translational control signals. These methods include, for example, *in vitro* recombinant DNA techniques, synthetic techniques, and *in vivo* genetic recombination. The invention, thus, provides replicable vectors comprising a nucleotide sequence encoding an antibody molecule of the invention, or a heavy or light chain thereof, or a heavy or light chain variable domain, operably linked to a promoter. Such vectors may include the nucleotide sequence encoding the constant region of the antibody molecule (see, e.g., PCT Publication WO 86/05807; PCT Publication WO 89/01036; and U.S. Patent No. 5,122,464) and the variable domain of the antibody may be cloned into such a vector for expression of the entire heavy or light chain.

The expression vector is transferred to a host cell by conventional techniques and the transfected cells are then cultured by conventional techniques to produce an antibody. Thus, the invention includes host cells containing a polynucleotide encoding an antibody of the invention, or a heavy or light chain thereof, or a single chain antibody, operably linked to a heterologous promoter. In preferred embodiments for the expression of double-chained antibodies, vectors encoding both the heavy and light chains may be co-expressed in the host cell for expression of the entire immunoglobulin molecule, as detailed below:

A variety of host-expression vector systems may be utilized to express the antibody molecules of the invention. Such host-expression systems represent vehicles by which the coding sequences of interest may be produced and subsequently purified, but also represent cells which may, when transformed or transfected with the appropriate nucleotide coding sequences, express an antibody molecule of the invention *in situ*. These include but are not limited to microorganisms such as bacteria (e.g., *E. coli*, *B. subtilis*) transformed with recombinant bacteriophage DNA, plasmid DNA or cosmid DNA expression vectors containing antibody coding sequences; yeast (e.g., *Saccharomyces*, *Pichia*) transformed with recombinant yeast expression vectors containing antibody coding sequences; insect cell systems infected with recombinant virus expression vectors (e.g., baculovirus) containing antibody coding sequences; plant cell systems infected with recombinant virus expression vectors (e.g., cauliflower mosaic virus, CaMV; tobacco mosaic virus, TMV) or transformed with recombinant plasmid expression vectors (e.g., Ti plasmid) containing antibody coding sequences; or mammalian cell systems (e.g., COS,

CHO, BHK, 293, 3T3 cells) harboring recombinant expression constructs containing promoters derived from the genome of mammalian cells (e.g., metallothionein promoter) or from mammalian viruses (e.g., the adenovirus late promoter; the vaccinia virus 7.5K promoter). Preferably, bacterial cells such as *Escherichia coli*, and more preferably, eukaryotic cells, especially for the expression of whole recombinant antibody molecule, are used for the expression of a recombinant antibody molecule. For example, mammalian cells such as Chinese hamster ovary cells (CHO), in conjunction with a vector such as the major intermediate early gene promoter element from human cytomegalovirus is an effective expression system for antibodies (Foecking et al., *Gene* 45:101 (1986); Cockett et al., *Bio/Technology* 8:2 (1990)).

In bacterial systems, a number of expression vectors may be advantageously selected depending upon the use intended for the antibody molecule being expressed. For example, when a large quantity of such a protein is to be produced, for the generation of pharmaceutical compositions of an antibody molecule, vectors which direct the expression of high levels of fusion protein products that are readily purified may be desirable. Such vectors include, but are not limited, to the *E. coli* expression vector pUR278 (Ruther et al., *EMBO J.* 2:1791 (1983)), in which the antibody coding sequence may be ligated individually into the vector in frame with the lac Z coding region so that a fusion protein is produced; pIN vectors (Inouye & Inouye, *Nucleic Acids Res.* 13:3101-3109 (1985); Van Heeke & Schuster, *J. Biol. Chem.* 24:5503-5509 (1989)); and the like. pGEX vectors may also be used to express foreign polypeptides as fusion proteins with glutathione S-transferase (GST). In general, such fusion proteins are soluble and can easily be purified from lysed cells by adsorption and binding to matrix glutathione-agarose beads followed by elution in the presence of free glutathione. The pGEX vectors are designed to include thrombin or factor Xa protease cleavage sites so that the cloned target gene product can be released from the GST moiety.

In an insect system, *Autographa californica* nuclear polyhedrosis virus (AcNPV) is used as a vector to express foreign genes. The virus grows in *Spodoptera frugiperda* cells. The antibody coding sequence may be cloned individually into non-essential regions (for example the polyhedrin gene) of the virus and placed under control of an AcNPV promoter (for example the polyhedrin promoter).

In mammalian host cells, a number of viral-based expression systems may be utilized. In cases where an adenovirus is used as an expression vector, the antibody coding sequence of interest may be ligated to an adenovirus transcription/translation control complex, e.g., the late promoter and tripartite leader sequence. This chimeric gene may then be inserted in the adenovirus genome by *in vitro* or *in vivo* recombination. Insertion in a non-essential region of the viral genome (e.g., region E1 or E3) will result in a recombinant virus that is viable and capable of expressing the antibody molecule in infected hosts. (e.g., see Logan & Shenk, Proc. Natl. Acad. Sci. USA 81:355-359 (1984)).

Specific initiation signals may also be required for efficient translation of inserted antibody coding sequences. These signals include the ATG initiation codon and adjacent sequences. Furthermore, the initiation codon must be in phase with the reading frame of the desired coding sequence to ensure translation of the entire insert. These exogenous translational control signals and initiation codons can be of a variety of origins, both natural and synthetic. The efficiency of expression may be enhanced by the inclusion of appropriate transcription enhancer elements, transcription terminators, etc. (see Bittner et al., Methods in Enzymol. 153:51-544 (1987)).

In addition, a host cell strain may be chosen which modulates the expression of the inserted sequences, or modifies and processes the gene product in the specific fashion desired. Such modifications (e.g., glycosylation) and processing (e.g., cleavage) of protein products may be important for the function of the protein. Different host cells have characteristic and specific mechanisms for the post-translational processing and modification of proteins and gene products. Appropriate cell lines or host systems can be chosen to ensure the correct modification and processing of the foreign protein expressed.

To this end, eukaryotic host cells which possess the cellular machinery for proper processing of the primary transcript, glycosylation, and phosphorylation of the gene product may be used. Such mammalian host cells include but are not limited to CHO, VERY, BHK, Hela, COS, MDCK, 293, 3T3, WI38, and in particular, breast cancer cell lines such as, for example, BT483, Hs578T, HTB2, BT20 and T47D, and normal mammary gland cell line such as, for example, CRL7030 and Hs578Bst.

For long-term, high-yield production of recombinant proteins, stable expression is preferred. For example, cell lines which stably express the antibody molecule may be engineered. Rather than using expression vectors which contain viral origins of

replication, host cells can be transformed with DNA controlled by appropriate expression control elements (e.g., promoter, enhancer, sequences, transcription terminators, polyadenylation sites, etc.), and a selectable marker. Following the introduction of the foreign DNA, engineered cells may be allowed to grow for 1-2 days in an enriched media, and then are switched to a selective media. The selectable marker in the recombinant plasmid confers resistance to the selection and allows cells to stably integrate the plasmid into their chromosomes and grow to form foci which in turn can be cloned and expanded into cell lines. This method may advantageously be used to engineer cell lines which express the antibody molecule. Such engineered cell lines may be particularly useful in screening and evaluation of compounds that interact directly or indirectly with the antibody molecule.

A number of selection systems may be used, including but not limited to the herpes simplex virus thymidine kinase (Wigler et al., Cell 11:223 (1977)), hypoxanthine-guanine phosphoribosyltransferase (Szybalska & Szybalski, Proc. Natl. Acad. Sci. USA 48:202 (1992)), and adenine phosphoribosyltransferase (Lowy et al., Cell 22:817 (1980)) genes can be employed in tk-, hgp<sup>r</sup>t- or ap<sup>r</sup>t- cells, respectively. Also, antimetabolite resistance can be used as the basis of selection for the following genes: dhfr, which confers resistance to methotrexate (Wigler et al., Natl. Acad. Sci. USA 77:357 (1980); O'Hare et al., Proc. Natl. Acad. Sci. USA 78:1527 (1981)); gpt, which confers resistance to mycophenolic acid (Mulligan & Berg, Proc. Natl. Acad. Sci. USA 78:2072 (1981)); neo, which confers resistance to the aminoglycoside G-418 Clinical Pharmacy 12:488-505; Wu and Wu, Biotherapy 3:87-95 (1991); Tolstoshev, Ann. Rev. Pharmacol. Toxicol. 32:573-596 (1993); Mulligan, Science 260:926-932 (1993); and Morgan and Anderson, Ann. Rev. Biochem. 62:191-217 (1993); May, 1993, TIB TECH 11(5):155-215 (1993)); and hyg<sup>r</sup>, which confers resistance to hygromycin (Santerre et al., Gene 30:147 (1984)). Methods commonly known in the art of recombinant DNA technology may be routinely applied to select the desired recombinant clone, and such methods are described, for example, in Ausubel et al. (eds.), Current Protocols in Molecular Biology, John Wiley & Sons, NY (1993); Kriegler, Gene Transfer and Expression, A Laboratory Manual, Stockton Press, NY (1990); and in Chapters 12 and 13, Dracopoli et al. (eds), Current Protocols in Human Genetics, John Wiley & Sons, NY (1994); Colberre-Garapin et al., J. Mol. Biol. 150:1 (1981), which are incorporated by reference herein in their entireties.

The expression levels of an antibody molecule can be increased by vector amplification (for a review, see Bebbington and Hentschel, The use of vectors based on gene amplification for the expression of cloned genes in mammalian cells in DNA cloning, Vol.3. (Academic Press, New York, 1987)). When a marker in the vector system  
5 expressing antibody is amplifiable, increase in the level of inhibitor present in culture of host cell will increase the number of copies of the marker gene. Since the amplified region is associated with the antibody gene, production of the antibody will also increase (Crouse et al., Mol. Cell. Biol. 3:257 (1983)).

Vectors which use glutamine synthase (GS) or DHFR as the selectable markers can  
10 be amplified in the presence of the drugs methionine sulphoximine or methotrexate, respectively. An advantage of glutamine synthase based vectors are the availability of cell lines (e.g., the murine myeloma cell line, NS0) which are glutamine synthase negative. Glutamine synthase expression systems can also function in glutamine synthase expressing cells (e.g. Chinese Hamster Ovary (CHO) cells) by providing additional inhibitor to  
15 prevent the functioning of the endogenous gene. A glutamine synthase expression system and components thereof are detailed in PCT publications: WO87/04462; WO86/05807; WO89/01036; WO89/10404; and WO91/06657 which are incorporated in their entireties by reference herein. Additionally, glutamine synthase expression vectors that may be used according to the present invention are commercially available from suppliers, including,  
20 for example Lonza Biologics, Inc. (Portsmouth, NH). Expression and production of monoclonal antibodies using a GS expression system in murine myeloma cells is described in Bebbington *et al.*, *Bio/technology* 10:169(1992) and in Biblia and Robinson *Biotechnol. Prog.* 11:1 (1995) which are incorporated in their entireties by reference herein.

The host cell may be co-transfected with two expression vectors of the invention,  
25 the first vector encoding a heavy chain derived polypeptide and the second vector encoding a light chain derived polypeptide. The two vectors may contain identical selectable markers which enable equal expression of heavy and light chain polypeptides. Alternatively, a single vector may be used which encodes, and is capable of expressing, both heavy and light chain polypeptides. In such situations, the light chain should be  
30 placed before the heavy chain to avoid an excess of toxic free heavy chain (Proudfoot, Nature 322:52 (1986); Kohler, Proc. Natl. Acad. Sci. USA 77:2197 (1980)). The coding sequences for the heavy and light chains may comprise cDNA or genomic DNA.

Once an antibody molecule of the invention has been produced by an animal, chemically synthesized, or recombinantly expressed, it may be purified by any method known in the art for purification of an immunoglobulin molecule, for example, by chromatography (e.g., ion exchange, affinity, particularly by affinity for the specific antigen after Protein A, and sizing column chromatography), centrifugation, differential solubility, or by any other standard technique for the purification of proteins. In addition, the antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention or fragments thereof can be fused to heterologous polypeptide sequences described herein or otherwise known in the art, to facilitate purification.

#### *Modifications of Antibodies*

Antibodies that bind a Therapeutic protein or fragments or variants can be fused to marker sequences, such as a peptide to facilitate purification. In preferred embodiments, the marker amino acid sequence is a hexa-histidine peptide, such as the tag provided in a pQE vector (QIAGEN, Inc., 9259 Eton Avenue, Chatsworth, CA, 91311), among others, many of which are commercially available. As described in Gentz et al., Proc. Natl. Acad. Sci. USA 86:821-824 (1989), for instance, hexa-histidine provides for convenient purification of the fusion protein. Other peptide tags useful for purification include, but are not limited to, the "HA" tag, which corresponds to an epitope derived from the influenza hemagglutinin protein (Wilson et al., Cell 37:767 (1984)) and the "flag" tag.

The present invention further encompasses antibodies or fragments thereof conjugated to a diagnostic or therapeutic agent. The antibodies can be used diagnostically to, for example, monitor the development or progression of a tumor as part of a clinical testing procedure to, e.g., determine the efficacy of a given treatment regimen. Detection can be facilitated by coupling the antibody to a detectable substance. Examples of detectable substances include various enzymes, prosthetic groups, fluorescent materials, luminescent materials, bioluminescent materials, radioactive materials, positron emitting metals using various positron emission tomographies, and nonradioactive paramagnetic metal ions. The detectable substance may be coupled or conjugated either directly to the antibody (or fragment thereof) or indirectly, through an intermediate (such as, for example, a linker known in the art) using techniques known in the art. See, for example, U.S. Patent

No. 4,741,900 for metal ions which can be conjugated to antibodies for use as diagnostics according to the present invention. Examples of suitable enzymes include horseradish peroxidase, alkaline phosphatase, beta-galactosidase, or acetylcholinesterase; examples of suitable prosthetic group complexes include streptavidin/biotin and avidin/biotin; examples of suitable fluorescent materials include umbelliferone, fluorescein, fluorescein isothiocyanate, rhodamine, dichlorotriazinylamine fluorescein, dansyl chloride or phycoerythrin; an example of a luminescent material includes luminol; examples of bioluminescent materials include luciferase, luciferin, and aequorin; and examples of suitable radioactive material include  $^{125}\text{I}$ ,  $^{131}\text{I}$ ,  $^{111}\text{In}$  or  $^{99}\text{Tc}$ . Other examples of detectable substances have been described elsewhere herein.

Further, an antibody of the invention may be conjugated to a therapeutic moiety such as a cytotoxin, e.g., a cytostatic or cytocidal agent, a therapeutic agent or a radioactive metal ion, e.g., alpha-emitters such as, for example,  $^{213}\text{Bi}$ . A cytotoxin or cytotoxic agent includes any agent that is detrimental to cells. Examples include paclitaxol, cytochalasin B, gramicidin D, ethidium bromide, emetine, mitomycin, etoposide, tenoposide, vincristine, vinblastine, colchicin, doxorubicin, daunorubicin, dihydroxy anthracin dione, mitoxantrone, mithramycin, actinomycin D, 1-dehydrotestosterone, glucocorticoids, procaine, tetracaine, lidocaine, propranolol, and puromycin and analogs or homologs thereof. Therapeutic agents include, but are not limited to, antimetabolites (e.g., methotrexate, 6-mercaptopurine, 6-thioguanine, cytarabine, 5-fluorouracil decarbazine), alkylating agents (e.g., mechlorethamine, thioepa chlorambucil, melphalan, carmustine (BSNU) and lomustine (CCNU), cyclophosphamide, busulfan, dibromomannitol, streptozotocin, mitomycin C, and cis-dichlorodiamine platinum (II) (DDP) cisplatin), anthracyclines (e.g., daunorubicin (formerly daunomycin) and doxorubicin), antibiotics (e.g., dactinomycin (formerly actinomycin), bleomycin, mithramycin, and anthramycin (AMC)), and anti-mitotic agents (e.g., vincristine and vinblastine).

The conjugates of the invention can be used for modifying a given biological response, the therapeutic agent or drug moiety is not to be construed as limited to classical chemical therapeutic agents. For example, the drug moiety may be a protein or polypeptide possessing a desired biological activity. Such proteins may include, for example, a toxin such as abrin, ricin A, pseudomonas exotoxin, or diphtheria toxin; a

protein such as tumor necrosis factor, alpha-interferon,  $\beta$ -interferon, nerve growth factor, platelet derived growth factor, tissue plasminogen activator, an apoptotic agent, e.g., TNF-alpha, TNF-beta, AIM I (See, International Publication No. WO 97/33899), AIM II (See, International Publication No. WO 97/34911), Fas Ligand (Takahashi *et al.*, *Int. Immunol.*, 6:1567-1574 (1994)), VEGI (See, International Publication No. WO 99/23105), a thrombotic agent or an anti-angiogenic agent, e.g., angiostatin or endostatin; or, biological response modifiers such as, for example, lymphokines, interleukin-1 ("IL-1"), interleukin-2 ("IL-2"), interleukin-6 ("IL-6"), granulocyte macrophage colony stimulating factor ("GM-CSF"), granulocyte colony stimulating factor ("G-CSF"), or other growth factors.

Antibodies may also be attached to solid supports, which are particularly useful for immunoassays or purification of the target antigen. Such solid supports include, but are not limited to, glass, cellulose, polyacrylamide, nylon, polystyrene, polyvinyl chloride or polypropylene.

Techniques for conjugating such therapeutic moiety to antibodies are well known. See, for example, Arnon *et al.*, "Monoclonal Antibodies For Immunotargeting Of Drugs In Cancer Therapy", in *Monoclonal Antibodies And Cancer Therapy*, Reisfeld *et al.* (eds.), pp. 243-56 (Alan R. Liss, Inc. 1985); Hellstrom *et al.*, "Antibodies For Drug Delivery", in *Controlled Drug Delivery* (2nd Ed.), Robinson *et al.* (eds.), pp. 623-53 (Marcel Dekker, Inc. 1987); Thorpe, "Antibody Carriers Of Cytotoxic Agents In Cancer Therapy: A Review", in *Monoclonal Antibodies '84: Biological And Clinical Applications*, Pinchera *et al.* (eds.), pp. 475-506 (1985); "Analysis, Results, And Future Prospective Of The Therapeutic Use Of Radiolabeled Antibody In Cancer Therapy", in *Monoclonal Antibodies For Cancer Detection And Therapy*, Baldwin *et al.* (eds.), pp. 303-16 (Academic Press 1985), and Thorpe *et al.*, "The Preparation And Cytotoxic Properties Of Antibody-Toxin Conjugates", *Immunol. Rev.* 62:119-58 (1982).

Alternatively, an antibody can be conjugated to a second antibody to form an antibody heteroconjugate as described by Segal in U.S. Patent No. 4,676,980, which is incorporated herein by reference in its entirety.

An antibody, with or without a therapeutic moiety conjugated to it, administered alone or in combination with cytotoxic factor(s) and/or cytokine(s) can be used as a therapeutic.

#### *Antibody-albumin fusion*



Antibodies that bind to a Therapeutic protein and that may correspond to a Therapeutic protein portion of an albumin fusion protein of the invention include, but are not limited to, antibodies that bind a Therapeutic protein disclosed in the "Therapeutic Protein X" column of Table 1, or a fragment or variant thereof.

5 In specific embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, the VH domain. In other embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic  
10 protein portion of an albumin fusion protein comprises, or alternatively consists of, one, two or three VH CDRs. In other embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, the VH CDR1. In other embodiments, the fragment or variant of an antibody that  
15 immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, the VH CDR2. In other embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, the VH  
20 CDR3.

In specific embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, the VL domain. In other embodiments, the fragment or variant of an antibody that  
25 immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, one, two or three VL CDRs. In other embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, the VL  
30 CDR1. In other embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, the VL

CDR2. In other embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, the VL CDR3.

5 In other embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, one, two, three, four, five, or six VH and/or VL CDRs.

10 In preferred embodiments, the fragment or variant of an antibody that immunospecifically binds a Therapeutic protein and that corresponds to a Therapeutic protein portion of an albumin fusion protein comprises, or alternatively consists of, an scFv comprising the VH domain of the Therapeutic antibody, linked to the VL domain of the therapeutic antibody by a peptide linker such as (Gly<sub>4</sub>Ser)<sub>3</sub> (SEQ ID NO:36).

#### 15 *Immunophenotyping*

The antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein (or fragment or variant thereof) may be utilized for immunophenotyping of cell lines and biological samples. Therapeutic proteins of the present invention may be useful as cell-specific markers, or more specifically as cellular markers that are differentially expressed at various stages of differentiation and/or maturation of particular cell types. Monoclonal antibodies (or albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein) directed against a specific epitope, or combination of epitopes, will allow for the screening of cellular populations expressing the marker. Various techniques can be utilized using monoclonal antibodies (or albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein) to screen for cellular populations expressing the marker(s), and include magnetic separation using antibody-coated magnetic beads, "panning" with antibody attached to a solid matrix (i.e., plate), and flow cytometry (See, e.g., U.S. Patent 25 5,985,660; and Morrison *et al.*, *Cell*, 96:737-49 (1999)).

30 These techniques allow for the screening of particular populations of cells, such as might be found with hematological malignancies (i.e. minimal residual disease (MRD) in

acute leukemic patients) and "non-self" cells in transplantations to prevent Graft-versus-Host Disease (GVHD). Alternatively, these techniques allow for the screening of hematopoietic stem and progenitor cells capable of undergoing proliferation and/or differentiation, as might be found in human umbilical cord blood.

5

*Characterizing Antibodies that bind a Therapeutic Protein and Albumin Fusion Proteins Comprising a Fragment or Variant of an Antibody that binds a Therapeutic Protein*

10 The antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein (or fragment or variant thereof) may be characterized in a variety of ways. In particular, Albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be assayed for the ability to specifically  
15 bind to the same antigens specifically bound by the antibody that binds a Therapeutic protein corresponding to the antibody that binds a Therapeutic protein portion of the albumin fusion protein using techniques described herein or routinely modifying techniques known in the art.

Assays for the ability of the antibodies of the invention or albumin fusion proteins  
20 of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein (or fragment or variant thereof) to (specifically) bind a specific protein or epitope may be performed in solution (*e.g.*, Houghten, Bio/Techniques 13:412-421(1992)), on beads (*e.g.*, Lam, Nature 354:82-84 (1991)), on chips (*e.g.*, Fodor, Nature 364:555-556 (1993)), on bacteria (*e.g.*, U.S. Patent No. 5,223,409), on spores (*e.g.*,  
25 Patent Nos. 5,571,698; 5,403,484; and 5,223,409), on plasmids (*e.g.*, Cull et al., Proc. Natl. Acad. Sci. USA 89:1865-1869 (1992)) or on phage (*e.g.*, Scott and Smith, Science 249:386-390 (1990); Devlin, Science 249:404-406 (1990); Cwirla et al., Proc. Natl. Acad. Sci. USA 87:6378-6382 (1990); and Felici, J. Mol. Biol. 222:301-310 (1991)) (each of these references is incorporated herein in its entirety by reference). The antibodies of the  
30 invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein (or fragment or variant thereof) may also be assayed for their specificity and affinity for a specific protein or epitope using

or routinely modifying techniques described herein or otherwise known in the art.

The albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be assayed for cross-reactivity with other antigens (e.g., molecules that have sequence/structure conservation with the molecule(s) specifically bound by the antibody that binds a Therapeutic protein (or  
5 fragment or variant thereof) corresponding to the Therapeutic protein portion of the albumin fusion protein of the invention) by any method known in the art.

Immunoassays which can be used to analyze (immunospecific) binding and cross-reactivity include, but are not limited to, competitive and non-competitive assay systems using techniques such as western blots, radioimmunoassays, ELISA (enzyme linked  
10 immunosorbent assay), "sandwich" immunoassays, immunoprecipitation assays, precipitin reactions, gel diffusion precipitin reactions, immunodiffusion assays, agglutination assays, complement-fixation assays, immunoradiometric assays, fluorescent immunoassays, and protein A immunoassays, to name but a few. Such assays are routine and well known in the art (see, e.g., Ausubel et al, eds, 1994, Current Protocols in Molecular Biology, Vol. 1,  
15 John Wiley & Sons, Inc., New York, which is incorporated by reference herein in its entirety). Exemplary immunoassays are described briefly below (but are not intended by way of limitation).

Immunoprecipitation protocols generally comprise lysing a population of cells in a lysis buffer such as RIPA buffer (1% NP-40 or Triton X-100, 1% sodium deoxycholate, 0.1% SDS, 0.15 M NaCl, 0.01 M sodium phosphate at pH 7.2, 1% Trasyolol) supplemented with protein phosphatase and/or protease inhibitors (e.g., EDTA, PMSF, aprotinin, sodium vanadate), adding an antibody of the invention or albumin fusion protein of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein  
25 (or fragment or variant thereof) to the cell lysate, incubating for a period of time (e.g., 1 to 4 hours) at 40 degrees C, adding protein A and/or protein G sepharose beads (or beads coated with an appropriate anti-idiotypic antibody or anti-albumin antibody in the case when an albumin fusion protein comprising at least a fragment or variant of a Therapeutic antibody) to the cell lysate, incubating for about an hour or more at 40 degrees C, washing  
30 the beads in lysis buffer and resuspending the beads in SDS/sample buffer. The ability of the antibody or albumin fusion protein of the invention to immunoprecipitate a particular antigen can be assessed by, e.g., western blot analysis. One of skill in the art would be

knowledgeable as to the parameters that can be modified to increase the binding of the antibody or albumin fusion protein to an antigen and decrease the background (*e.g.*, pre-clearing the cell lysate with sepharose beads). For further discussion regarding immunoprecipitation protocols see, *e.g.*, Ausubel et al, eds, 1994, Current Protocols in Molecular Biology, Vol. 1, John Wiley & Sons, Inc., New York at 10.16.1.

Western blot analysis generally comprises preparing protein samples, electrophoresis of the protein samples in a polyacrylamide gel (*e.g.*, 8%- 20% SDS-PAGE depending on the molecular weight of the antigen), transferring the protein sample from the polyacrylamide gel to a membrane such as nitrocellulose, PVDF or nylon, blocking the membrane in blocking solution (*e.g.*, PBS with 3% BSA or non-fat milk), washing the membrane in washing buffer (*e.g.*, PBS-Tween 20), applying the antibody or albumin fusion protein of the invention (diluted in blocking buffer) to the membrane, washing the membrane in washing buffer, applying a secondary antibody (which recognizes the albumin fusion protein, *e.g.*, an anti-human serum albumin antibody) conjugated to an enzymatic substrate (*e.g.*, horseradish peroxidase or alkaline phosphatase) or radioactive molecule (*e.g.*,  $^{32}\text{P}$  or  $^{125}\text{I}$ ) diluted in blocking buffer, washing the membrane in wash buffer, and detecting the presence of the antigen. One of skill in the art would be knowledgeable as to the parameters that can be modified to increase the signal detected and to reduce the background noise. For further discussion regarding western blot protocols see, *e.g.*, Ausubel et al, eds, 1994, Current Protocols in Molecular Biology, Vol. 1, John Wiley & Sons, Inc., New York at 10.8.1.

ELISAs comprise preparing antigen, coating the well of a 96-well microtiter plate with the antigen, washing away antigen that did not bind the wells, adding the antibody or albumin fusion protein (comprising at least a fragment or variant of an antibody that binds a Therapeutic protein) of the invention conjugated to a detectable compound such as an enzymatic substrate (*e.g.*, horseradish peroxidase or alkaline phosphatase) to the wells and incubating for a period of time, washing away unbound or non-specifically bound albumin fusion proteins, and detecting the presence of the antibody or albumin fusion proteins specifically bound to the antigen coating the well. In ELISAs the antibody or albumin fusion protein does not have to be conjugated to a detectable compound; instead, a second antibody (which recognizes the antibody or albumin fusion protein, respectively) conjugated to a detectable compound may be added to the well. Further, instead of coating

the well with the antigen, antibody or the albumin fusion protein may be coated to the well. In this case, the detectable molecule could be the antigen conjugated to a detectable compound such as an enzymatic substrate (e.g., horseradish peroxidase or alkaline phosphatase). One of skill in the art would be knowledgeable as to the parameters that can be modified to increase the signal detected as well as other variations of ELISAs known in the art. For further discussion regarding ELISAs see, e.g., Ausubel et al, eds, 1994, Current Protocols in Molecular Biology, Vol. 1, John Wiley & Sons, Inc., New York at 11.2.1.

The binding affinity of an albumin fusion protein to a protein, antigen, or epitope and the off-rate of an antibody- or albumin fusion protein-protein/antigen/epitope interaction can be determined by competitive binding assays. One example of a competitive binding assay is a radioimmunoassay comprising the incubation of labeled antigen (e.g.,  $^3\text{H}$  or  $^{125}\text{I}$ ) with the antibody or albumin fusion protein of the invention in the presence of increasing amounts of unlabeled antigen, and the detection of the antibody bound to the labeled antigen. The affinity of the antibody or albumin fusion protein of the present invention for a specific protein, antigen, or epitope and the binding off-rates can be determined from the data by Scatchard plot analysis. Competition with a second protein that binds the same protein, antigen or epitope as the antibody or albumin fusion protein, can also be determined using radioimmunoassays. In this case, the protein, antigen or epitope is incubated with an antibody or albumin fusion protein of the present invention conjugated to a labeled compound (e.g.,  $^3\text{H}$  or  $^{125}\text{I}$ ) in the presence of increasing amounts of an unlabeled second protein that binds the same protein, antigen, or epitope as the albumin fusion protein of the invention.

In a preferred embodiment, BIAcore kinetic analysis is used to determine the binding on and off rates of antibody or albumin fusion proteins of the invention to a protein, antigen or epitope. BIAcore kinetic analysis comprises analyzing the binding and dissociation of antibodies, albumin fusion proteins, or specific polypeptides, antigens or epitopes from chips with immobilized specific polypeptides, antigens or epitopes, antibodies or albumin fusion proteins, respectively, on their surface.

#### *Therapeutic Uses*

The present invention is further directed to antibody-based therapies which involve administering antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein to an animal, preferably a mammal, and most preferably a human, patient for treating one or more of the disclosed diseases, disorders, or conditions. Therapeutic compounds of the invention include, but are not limited to, antibodies of the invention (including fragments, analogs and derivatives thereof as described herein), nucleic acids encoding antibodies of the invention (including fragments, analogs and derivatives thereof and anti-idiotypic antibodies as described herein), albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein, and nucleic acids encoding such albumin fusion proteins. The antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein can be used to treat, inhibit or prevent diseases, disorders or conditions associated with aberrant expression and/or activity of a Therapeutic protein, including, but not limited to, any one or more of the diseases, disorders, or conditions described herein. The treatment and/or prevention of diseases, disorders, or conditions associated with aberrant expression and/or activity of a Therapeutic protein includes, but is not limited to, alleviating symptoms associated with those diseases, disorders or conditions. antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be provided in pharmaceutically acceptable compositions as known in the art or as described herein.

In a specific and preferred embodiment, the present invention is directed to antibody-based therapies which involve administering antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein to an animal, preferably a mammal, and most preferably a human, patient for treating one or more diseases, disorders, or conditions, including but not limited to: neural disorders, immune system disorders, muscular disorders, reproductive disorders, gastrointestinal disorders, pulmonary disorders, cardiovascular disorders, renal disorders, proliferative disorders, and/or cancerous diseases and conditions., and/or as described elsewhere herein. Therapeutic compounds of the invention include, but are not limited to, antibodies of the invention (e.g., antibodies

directed to the full length protein expressed on the cell surface of a mammalian cell; antibodies directed to an epitope of a Therapeutic protein and nucleic acids encoding antibodies of the invention (including fragments, analogs and derivatives thereof and anti-idiotypic antibodies as described herein). The antibodies of the invention can be used to  
5 treat, inhibit or prevent diseases, disorders or conditions associated with aberrant expression and/or activity of a Therapeutic protein, including, but not limited to, any one or more of the diseases, disorders, or conditions described herein. The treatment and/or prevention of diseases, disorders, or conditions associated with aberrant expression and/or activity of a Therapeutic protein includes, but is not limited to, alleviating symptoms  
10 associated with those diseases, disorders or conditions. Antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be provided in pharmaceutically acceptable compositions as known in the art or as described herein.

A summary of the ways in which the antibodies of the invention or albumin fusion  
15 proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be used therapeutically includes binding Therapeutic proteins locally or systemically in the body or by direct cytotoxicity of the antibody, e.g. as mediated by complement (CDC) or by effector cells (ADCC). Some of these approaches are described in more detail below. Armed with the teachings provided herein, one of  
20 ordinary skill in the art will know how to use the antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein for diagnostic, monitoring or therapeutic purposes without undue experimentation.

The antibodies of the invention or albumin fusion proteins of the invention  
25 comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be advantageously utilized in combination with other monoclonal or chimeric antibodies, or with lymphokines or hematopoietic growth factors (such as, e.g., IL-2, IL-3 and IL-7), for example, which serve to increase the number or activity of effector cells which interact with the antibodies.

30 The antibodies of the invention or albumin fusion proteins of the invention comprising at least a fragment or variant of an antibody that binds a Therapeutic protein may be administered alone or in combination with other types of treatments (e.g., radiation



therapy, chemotherapy, hormonal therapy, immunotherapy and anti-tumor agents). Generally, administration of products of a species origin or species reactivity (in the case of antibodies) that is the same species as that of the patient is preferred. Thus, in a preferred embodiment, human antibodies, fragments derivatives, analogs, or nucleic acids, are administered to a human patient for therapy or prophylaxis.

It is preferred to use high affinity and/or potent *in vivo* inhibiting and/or neutralizing antibodies against Therapeutic proteins, fragments or regions thereof, (or the albumin fusion protein correlate of such an antibody) for both immunoassays directed to and therapy of disorders related to polynucleotides or polypeptides, including fragments thereof, of the present invention. Such antibodies, fragments, or regions, will preferably have an affinity for polynucleotides or polypeptides of the invention, including fragments thereof. Preferred binding affinities include dissociation constants or  $K_d$ 's less than  $5 \times 10^{-2}$  M,  $10^{-2}$  M,  $5 \times 10^{-3}$  M,  $10^{-3}$  M,  $5 \times 10^{-4}$  M,  $10^{-4}$  M. More preferred binding affinities include those with a dissociation constant or  $K_d$  less than  $5 \times 10^{-5}$  M,  $10^{-5}$  M,  $5 \times 10^{-6}$  M,  $10^{-6}$  M,  $5 \times 10^{-7}$  M,  $10^{-7}$  M,  $5 \times 10^{-8}$  M or  $10^{-8}$  M. Even more preferred binding affinities include those with a dissociation constant or  $K_d$  less than  $5 \times 10^{-9}$  M,  $10^{-9}$  M,  $5 \times 10^{-10}$  M,  $10^{-10}$  M,  $5 \times 10^{-11}$  M,  $10^{-11}$  M,  $5 \times 10^{-12}$  M,  $10^{-12}$  M,  $5 \times 10^{-13}$  M,  $10^{-13}$  M,  $5 \times 10^{-14}$  M,  $10^{-14}$  M,  $5 \times 10^{-15}$  M, or  $10^{-15}$  M.

### Gene Therapy

In a specific embodiment, nucleic acids comprising sequences encoding antibodies that bind therapeutic proteins or albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein are administered to treat, inhibit or prevent a disease or disorder associated with aberrant expression and/or activity of a Therapeutic protein, by way of gene therapy. Gene therapy refers to therapy performed by the administration to a subject of an expressed or expressible nucleic acid. In this embodiment of the invention, the nucleic acids produce their encoded protein that mediates a therapeutic effect.

Any of the methods for gene therapy available in the art can be used according to the present invention. Exemplary methods are described in more detail elsewhere in this application.

*Demonstration of Therapeutic or Prophylactic Activity*

The compounds or pharmaceutical compositions of the invention are preferably tested in vitro, and then *in vivo* for the desired therapeutic or prophylactic activity, prior to use in humans. For example, in vitro assays to demonstrate the therapeutic or prophylactic utility of a compound or pharmaceutical composition include, the effect of a compound on a cell line or a patient tissue sample. The effect of the compound or composition on the cell line and/or tissue sample can be determined utilizing techniques known to those of skill in the art including, but not limited to, rosette formation assays and cell lysis assays. In accordance with the invention, in vitro assays which can be used to determine whether administration of a specific compound is indicated, include in vitro cell culture assays in which a patient tissue sample is grown in culture, and exposed to or otherwise administered a compound, and the effect of such compound upon the tissue sample is observed.

*Therapeutic/Prophylactic Administration and Composition*

The invention provides methods of treatment, inhibition and prophylaxis by administration to a subject of an effective amount of a compound or pharmaceutical composition of the invention, preferably an antibody. In a preferred embodiment, the compound is substantially purified (e.g., substantially free from substances that limit its effect or produce undesired side-effects). The subject is preferably an animal, including but not limited to animals such as cows, pigs, horses, chickens, cats, dogs, etc., and is preferably a mammal, and most preferably human.

Formulations and methods of administration that can be employed when the compound comprises a nucleic acid or an immunoglobulin are described above; additional appropriate formulations and routes of administration can be selected from among those described herein below.

Various delivery systems are known and can be used to administer a compound of the invention, e.g., encapsulation in liposomes, microparticles, microcapsules, recombinant cells capable of expressing the compound, receptor-mediated endocytosis (see, e.g., Wu and Wu, J. Biol. Chem. 262:4429-4432 (1987)), construction of a nucleic acid as part of a retroviral or other vector, etc. Methods of introduction include but are not limited to intradermal, intramuscular, intraperitoneal, intravenous, subcutaneous,

intranasal, epidural, and oral routes. The compounds or compositions may be administered by any convenient route, for example by infusion or bolus injection, by absorption through epithelial or mucocutaneous linings (e.g., oral mucosa, rectal and intestinal mucosa, etc.) and may be administered together with other biologically active  
5 agents. Administration can be systemic or local. In addition, it may be desirable to introduce the pharmaceutical compounds or compositions of the invention into the central nervous system by any suitable route, including intraventricular and intrathecal injection; intraventricular injection may be facilitated by an intraventricular catheter, for example, attached to a reservoir, such as an Ommaya reservoir. Pulmonary administration can also  
10 be employed, e.g., by use of an inhaler or nebulizer, and formulation with an aerosolizing agent.

In a specific embodiment, it may be desirable to administer the pharmaceutical compounds or compositions of the invention locally to the area in need of treatment; this may be achieved by, for example, and not by way of limitation, local infusion during  
15 surgery, topical application, e.g., in conjunction with a wound dressing after surgery, by injection, by means of a catheter, by means of a suppository, or by means of an implant, said implant being of a porous, non-porous, or gelatinous material, including membranes, such as sialastic membranes, or fibers. Preferably, when administering a protein, including an antibody, of the invention, care must be taken to use materials to which the  
20 protein does not absorb.

In another embodiment, the compound or composition can be delivered in a vesicle, in particular a liposome (see Langer, *Science* 249:1527-1533 (1990); Treat et al., in *Liposomes in the Therapy of Infectious Disease and Cancer*, Lopez-Berestein and Fidler (eds.), Liss, New York, pp. 353- 365 (1989); Lopez-Berestein, *ibid.*, pp. 317-327; see  
25 generally *ibid.*)

In yet another embodiment, the compound or composition can be delivered in a controlled release system. In one embodiment, a pump may be used (see Langer, *supra*; Sefton, *CRC Crit. Ref. Biomed. Eng.* 14:201 (1987); Buchwald et al., *Surgery* 88:507 (1980); Saudek et al., *N. Engl. J. Med.* 321:574 (1989)). In another embodiment,  
30 polymeric materials can be used (see *Medical Applications of Controlled Release*, Langer and Wise (eds.), CRC Pres., Boca Raton, Florida (1974); *Controlled Drug Bioavailability, Drug Product Design and Performance*, Smolen and Ball (eds.), Wiley, New York (1984);

Ranger and Peppas, J., Macromol. Sci. Rev. Macromol. Chem. 23:61 (1983); see also Levy et al., Science 228:190 (1985); During et al., Ann. Neurol. 25:351 (1989); Howard et al., J. Neurosurg. 71:105 (1989)). In yet another embodiment, a controlled release system can be placed in proximity of the therapeutic target, e.g., the brain, thus requiring only a  
5 fraction of the systemic dose (see, e.g., Goodson, in Medical Applications of Controlled Release, *supra*, vol. 2, pp. 115-138 (1984)).

Other controlled release systems are discussed in the review by Langer (Science 249:1527-1533 (1990)).

In a specific embodiment where the compound of the invention is a nucleic acid  
10 encoding a protein, the nucleic acid can be administered *in vivo* to promote expression of its encoded protein, by constructing it as part of an appropriate nucleic acid expression vector and administering it so that it becomes intracellular, e.g., by use of a retroviral vector (see U.S. Patent No. 4,980,286), or by direct injection, or by use of microparticle bombardment (e.g., a gene gun; Biolistic, Dupont), or coating with lipids or cell-surface  
15 receptors or transfecting agents; or by administering it in linkage to a homeobox-like peptide which is known to enter the nucleus (see e.g., Joliot et al., Proc. Natl. Acad. Sci. USA 88:1864-1868 (1991)), etc. Alternatively, a nucleic acid can be introduced intracellularly and incorporated within host cell DNA for expression, by homologous recombination.

20 The present invention also provides pharmaceutical compositions. Such compositions comprise a therapeutically effective amount of a compound, and a pharmaceutically acceptable carrier. In a specific embodiment, the term "pharmaceutically acceptable" means approved by a regulatory agency of the Federal or a state government or listed in the U.S. Pharmacopeia or other generally recognized pharmacopeia for use in  
25 animals, and more particularly in humans. The term "carrier" refers to a diluent, adjuvant, excipient, or vehicle with which the therapeutic is administered. Such pharmaceutical carriers can be sterile liquids, such as water and oils, including those of petroleum, animal, vegetable or synthetic origin, such as peanut oil, soybean oil, mineral oil, sesame oil and the like. Water is a preferred carrier when the pharmaceutical composition is administered  
30 intravenously. Saline solutions and aqueous dextrose and glycerol solutions can also be employed as liquid carriers, particularly for injectable solutions. Suitable pharmaceutical excipients include starch, glucose, lactose, sucrose, gelatin, malt, rice, flour, chalk, silica

gel, sodium stearate, glycerol monostearate, talc, sodium chloride, dried skim milk, glycerol, propylene, glycol, water, ethanol and the like. The composition, if desired, can also contain minor amounts of wetting or emulsifying agents, or pH buffering agents. These compositions can take the form of solutions, suspensions, emulsion, tablets, pills, capsules, powders, sustained-release formulations and the like. The composition can be formulated as a suppository, with traditional binders and carriers such as triglycerides. Oral formulation can include standard carriers such as pharmaceutical grades of mannitol, lactose, starch, magnesium stearate, sodium saccharine, cellulose, magnesium carbonate, etc. Examples of suitable pharmaceutical carriers are described in "Remington's Pharmaceutical Sciences" by E.W. Martin. Such compositions will contain a therapeutically effective amount of the compound, preferably in purified form, together with a suitable amount of carrier so as to provide the form for proper administration to the patient. The formulation should suit the mode of administration.

In a preferred embodiment, the composition is formulated in accordance with routine procedures as a pharmaceutical composition adapted for intravenous administration to human beings. Typically, compositions for intravenous administration are solutions in sterile isotonic aqueous buffer. Where necessary, the composition may also include a solubilizing agent and a local anesthetic such as lignocaine to ease pain at the site of the injection. Generally, the ingredients are supplied either separately or mixed together in unit dosage form, for example, as a dry lyophilized powder or water free concentrate in a hermetically sealed container such as an ampoule or sachette indicating the quantity of active agent. Where the composition is to be administered by infusion, it can be dispensed with an infusion bottle containing sterile pharmaceutical grade water or saline. Where the composition is administered by injection, an ampoule of sterile water for injection or saline can be provided so that the ingredients may be mixed prior to administration.

The compounds of the invention can be formulated as neutral or salt forms. Pharmaceutically acceptable salts include those formed with anions such as those derived from hydrochloric, phosphoric, acetic, oxalic, tartaric acids, etc., and those formed with cations such as those derived from sodium, potassium, ammonium, calcium, ferric hydroxides, isopropylamine, triethylamine, 2-ethylamino ethanol, histidine, procaine, etc.

The amount of the compound of the invention which will be effective in the treatment, inhibition and prevention of a disease or disorder associated with aberrant expression and/or activity of a Therapeutic protein can be determined by standard clinical techniques. In addition, in vitro assays may optionally be employed to help identify  
5 optimal dosage ranges. The precise dose to be employed in the formulation will also depend on the route of administration, and the seriousness of the disease or disorder, and should be decided according to the judgment of the practitioner and each patient's circumstances. Effective doses may be extrapolated from dose-response curves derived from in vitro or animal model test systems.

10 For antibodies, the dosage administered to a patient is typically 0.1 mg/kg to 100 mg/kg of the patient's body weight. Preferably, the dosage administered to a patient is between 0.1 mg/kg and 20 mg/kg of the patient's body weight, more preferably 1 mg/kg to 10 mg/kg of the patient's body weight. Generally, human antibodies have a longer half-life within the human body than antibodies from other species due to the immune response  
15 to the foreign polypeptides. Thus, lower dosages of human antibodies and less frequent administration is often possible. Further, the dosage and frequency of administration of antibodies of the invention may be reduced by enhancing uptake and tissue penetration (e.g., into the brain) of the antibodies by modifications such as, for example, lipidation.

### 20 *Diagnosis and Imaging*

Labeled antibodies and derivatives and analogs thereof that bind a Therapeutic protein (or fragment or variant thereof) (including albumin fusion proteins comprising at least a fragment or variant of an antibody that binds a Therapeutic protein), can be used for  
25 diagnostic purposes to detect, diagnose, or monitor diseases, disorders, and/or conditions associated with the aberrant expression and/or activity of Therapeutic protein. The invention provides for the detection of aberrant expression of a Therapeutic protein, comprising (a) assaying the expression of the Therapeutic protein in cells or body fluid of an individual using one or more antibodies specific to the polypeptide interest and (b)  
30 comparing the level of gene expression with a standard gene expression level, whereby an increase or decrease in the assayed Therapeutic protein expression level compared to the standard expression level is indicative of aberrant expression.

The invention provides a diagnostic assay for diagnosing a disorder, comprising (a) assaying the expression of the Therapeutic protein in cells or body fluid of an individual using one or more antibodies specific to the Therapeutic protein or albumin fusion proteins comprising at least a fragment of variant of an antibody specific to a Therapeutic protein, and (b) comparing the level of gene expression with a standard gene expression level, whereby an increase or decrease in the assayed Therapeutic protein gene expression level compared to the standard expression level is indicative of a particular disorder. With respect to cancer, the presence of a relatively high amount of transcript in biopsied tissue from an individual may indicate a predisposition for the development of the disease, or may provide a means for detecting the disease prior to the appearance of actual clinical symptoms. A more definitive diagnosis of this type may allow health professionals to employ preventative measures or aggressive treatment earlier thereby preventing the development or further progression of the cancer.

Antibodies of the invention or albumin fusion proteins comprising at least a fragment of variant of an antibody specific to a Therapeutic protein can be used to assay protein levels in a biological sample using classical immunohistological methods known to those of skill in the art (e.g., see Jalkanen et al., J. Cell. Biol. 101:976-985 (1985); Jalkanen et al., J. Cell Biol. 105:3087-3096 (1987)). Other antibody-based methods useful for detecting protein gene expression include immunoassays, such as the enzyme linked immunosorbent assay (ELISA) and the radioimmunoassay (RIA). Suitable antibody assay labels are known in the art and include enzyme labels, such as, glucose oxidase; radioisotopes, such as iodine ( $^{125}\text{I}$ ,  $^{121}\text{I}$ ), carbon ( $^{14}\text{C}$ ), sulfur ( $^{35}\text{S}$ ), tritium ( $^3\text{H}$ ), indium ( $^{112}\text{In}$ ), and technetium ( $^{99}\text{Tc}$ ); luminescent labels, such as luminol; and fluorescent labels, such as fluorescein and rhodamine, and biotin.

One facet of the invention is the detection and diagnosis of a disease or disorder associated with aberrant expression of a Therapeutic protein in an animal, preferably a mammal and most preferably a human. In one embodiment, diagnosis comprises: a) administering (for example, parenterally, subcutaneously, or intraperitoneally) to a subject an effective amount of a labeled molecule which specifically binds to the polypeptide of interest; b) waiting for a time interval following the administering for permitting the labeled molecule to preferentially concentrate at sites in the subject where the Therapeutic protein is expressed (and for unbound labeled molecule to be cleared to background level);

c) determining background level; and d) detecting the labeled molecule in the subject, such that detection of labeled molecule above the background level indicates that the subject has a particular disease or disorder associated with aberrant expression of the therapeutic protein. Background level can be determined by various methods including, comparing the amount of labeled molecule detected to a standard value previously determined for a particular system.

It will be understood in the art that the size of the subject and the imaging system used will determine the quantity of imaging moiety needed to produce diagnostic images. In the case of a radioisotope moiety, for a human subject, the quantity of radioactivity injected will normally range from about 5 to 20 millicuries of <sup>99m</sup>Tc. The labeled antibody, antibody fragment, or albumin fusion protein comprising at least a fragment or variant of an antibody that binds a Therapeutic protein will then preferentially accumulate at the location of cells which contain the specific Therapeutic protein. *In vivo* tumor imaging is described in S.W. Burchiel et al., "Immunopharmacokinetics of Radiolabeled Antibodies and Their Fragments." (Chapter 13 in Tumor Imaging: The Radiochemical Detection of Cancer, S.W. Burchiel and B. A. Rhodes, eds., Masson Publishing Inc. (1982)).

Depending on several variables, including the type of label used and the mode of administration, the time interval following the administration for permitting the labeled molecule to preferentially concentrate at sites in the subject and for unbound labeled molecule to be cleared to background level is 6 to 48 hours or 6 to 24 hours or 6 to 12 hours. In another embodiment the time interval following administration is 5 to 20 days or 5 to 10 days.

In an embodiment, monitoring of the disease or disorder is carried out by repeating the method for diagnosing the disease or disease, for example, one month after initial diagnosis, six months after initial diagnosis, one year after initial diagnosis, etc.

Presence of the labeled molecule can be detected in the patient using methods known in the art for *in vivo* scanning. These methods depend upon the type of label used. Skilled artisans will be able to determine the appropriate method for detecting a particular label. Methods and devices that may be used in the diagnostic methods of the invention include, but are not limited to, computed tomography (CT), whole body scan such as



position emission tomography (PET), magnetic resonance imaging (MRI), and sonography.

In a specific embodiment, the molecule is labeled with a radioisotope and is detected in the patient using a radiation responsive surgical instrument (Thurston et al.,  
5 U.S. Patent No. 5,441,050). In another embodiment, the molecule is labeled with a fluorescent compound and is detected in the patient using a fluorescence responsive scanning instrument. In another embodiment, the molecule is labeled with a positron emitting metal and is detected in the patient using positron emission-tomography. In yet another embodiment, the molecule is labeled with a paramagnetic label and is detected in a  
10 patient using magnetic resonance imaging (MRI).

### *Kits*

The present invention provides kits that can be used in the above methods. In one embodiment, a kit comprises an antibody, preferably a purified antibody, in one or more  
15 containers. In a specific embodiment, the kits of the present invention contain a substantially isolated polypeptide comprising an epitope which is specifically immunoreactive with an antibody included in the kit. Preferably, the kits of the present invention further comprise a control antibody which does not react with the polypeptide of interest. In another specific embodiment, the kits of the present invention contain a means  
20 for detecting the binding of an antibody to a polypeptide of interest (e.g., the antibody may be conjugated to a detectable substrate such as a fluorescent compound, an enzymatic substrate, a radioactive compound or a luminescent compound, or a second antibody which recognizes the first antibody may be conjugated to a detectable substrate).

In another specific embodiment of the present invention, the kit is a diagnostic kit  
25 for use in screening serum containing antibodies specific against proliferative and/or cancerous polynucleotides and polypeptides. Such a kit may include a control antibody that does not react with the polypeptide of interest. Such a kit may include a substantially isolated polypeptide antigen comprising an epitope which is specifically immunoreactive with at least one anti-polypeptide antigen antibody. Further, such a kit includes means for  
30 detecting the binding of said antibody to the antigen (e.g., the antibody may be conjugated to a fluorescent compound such as fluorescein or rhodamine which can be detected by flow cytometry). In specific embodiments, the kit may include a recombinantly produced

or chemically synthesized polypeptide antigen. The polypeptide antigen of the kit may also be attached to a solid support.

In a more specific embodiment the detecting means of the above-described kit includes a solid support to which said polypeptide antigen is attached. Such a kit may also  
5 include a non-attached reporter-labeled anti-human antibody. In this embodiment, binding of the antibody to the polypeptide antigen can be detected by binding of the said reporter-labeled antibody.

In an additional embodiment, the invention includes a diagnostic kit for use in screening serum containing antigens of the polypeptide of the invention. The diagnostic kit  
10 includes a substantially isolated antibody specifically immunoreactive with polypeptide or polynucleotide antigens, and means for detecting the binding of the polynucleotide or polypeptide antigen to the antibody. In one embodiment, the antibody is attached to a solid support. In a specific embodiment, the antibody may be a monoclonal antibody. The detecting means of the kit may include a second, labeled monoclonal antibody.  
15 Alternatively, or in addition, the detecting means may include a labeled, competing antigen.

In one diagnostic configuration, test serum is reacted with a solid phase reagent having a surface-bound antigen obtained by the methods of the present invention. After binding with specific antigen antibody to the reagent and removing unbound serum  
20 components by washing, the reagent is reacted with reporter-labeled anti-human antibody to bind reporter to the reagent in proportion to the amount of bound anti-antigen antibody on the solid support. The reagent is again washed to remove unbound labeled antibody, and the amount of reporter associated with the reagent is determined. Typically, the reporter is an enzyme which is detected by incubating the solid phase in the presence of a  
25 suitable fluorometric, luminescent or colorimetric substrate (Sigma, St. Louis, MO).

The solid surface reagent in the above assay is prepared by known techniques for attaching protein material to solid support material, such as polymeric beads, dip sticks, 96-well plate or filter material. These attachment methods generally include non-specific adsorption of the protein to the support or covalent attachment of the protein, typically  
30 through a free amine group, to a chemically reactive group on the solid support, such as an activated carboxyl, hydroxyl, or aldehyde group. Alternatively, streptavidin coated plates can be used in conjunction with biotinylated antigen(s).

Thus, the invention provides an assay system or kit for carrying out this diagnostic method. The kit generally includes a support with surface-bound recombinant antigens, and a reporter-labeled anti-human antibody for detecting surface-bound anti-antigen antibody.

5

### **Albumin Fusion Proteins**

The present invention relates generally to albumin fusion proteins and methods of treating, preventing, or ameliorating diseases or disorders. As used herein, "albumin fusion protein" refers to a protein formed by the fusion of at least one molecule of albumin (or a fragment or variant thereof) to at least one molecule of a Therapeutic protein (or fragment or variant thereof). An albumin fusion protein of the invention comprises at least a fragment or variant of a Therapeutic protein and at least a fragment or variant of human serum albumin, which are associated with one another, preferably by genetic fusion (i.e., the albumin fusion protein is generated by translation of a nucleic acid in which a polynucleotide encoding all or a portion of a Therapeutic protein is joined in-frame with a polynucleotide encoding all or a portion of albumin) or chemical conjugation to one another. The Therapeutic protein and albumin protein, once part of the albumin fusion protein, may be referred to as a "portion", "region" or "moiety" of the albumin fusion protein.

20

In one embodiment, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a Therapeutic protein (e.g., as described in Table 1) and a serum albumin protein. In other embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a biologically active and/or therapeutically active fragment of a Therapeutic protein and a serum albumin protein. In other embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a biologically active and/or therapeutically active variant of a Therapeutic protein and a serum albumin protein. In preferred embodiments, the serum albumin protein component of the albumin fusion protein is the mature portion of serum albumin.

30

In further embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a Therapeutic protein, and a biologically active

and/or therapeutically active fragment of serum albumin. In further embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a Therapeutic protein and a biologically active and/or therapeutically active variant of serum albumin. In preferred embodiments, the Therapeutic protein portion of the albumin fusion protein is the mature portion of the Therapeutic protein.

In further embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, a biologically active and/or therapeutically active fragment or variant of a Therapeutic protein and a biologically active and/or therapeutically active fragment or variant of serum albumin. In preferred embodiments, the invention provides an albumin fusion protein comprising, or alternatively consisting of, the mature portion of a Therapeutic protein and the mature portion of serum albumin.

Preferably, the albumin fusion protein comprises HA as the N-terminal portion, and a Therapeutic protein as the C-terminal portion. Alternatively, an albumin fusion protein comprising HA as the C-terminal portion, and a Therapeutic protein as the N-terminal portion may also be used.

In other embodiments, the albumin fusion protein has a Therapeutic protein fused to both the N-terminus and the C-terminus of albumin. In a preferred embodiment, the Therapeutic proteins fused at the N- and C- termini are the same Therapeutic proteins. In a preferred embodiment, the Therapeutic proteins fused at the N- and C- termini are different Therapeutic proteins. In another preferred embodiment, the Therapeutic proteins fused at the N- and C- termini are different Therapeutic proteins which may be used to treat or prevent the same disease, disorder, or condition (e.g. as listed in the "Preferred Indication Y" column of Table 1). In another preferred embodiment, the Therapeutic proteins fused at the N- and C- termini are different Therapeutic proteins which may be used to treat or prevent diseases or disorders (e.g. as listed in the "Preferred Indication Y" column of Table 1) which are known in the art to commonly occur in patients simultaneously.

In addition to albumin fusion protein in which the albumin portion is fused N-terminal and/or C-terminal of the Therapeutic protein portion, albumin fusion proteins of the invention may also be produced by inserting the Therapeutic protein or peptide of interest (e.g., a Therapeutic protein X as disclosed in Table 1, or an antibody that binds a Therapeutic protein or a fragment or variant thereof) into an internal region of HA. For

instance, within the protein sequence of the HA molecule a number of loops or turns exist between the end and beginning of  $\alpha$ -helices, which are stabilized by disulphide bonds (see Figures 9-11). The loops, as determined from the crystal structure of HA (Fig. 13) (PDB identifiers 1AO6, 1BJ5, 1BKE, 1BM0, 1E7E to 1E7I and 1UOR) for the most part extend  
5 away from the body of the molecule. These loops are useful for the insertion, or internal fusion, of therapeutically active peptides, particularly those requiring a secondary structure to be functional, or Therapeutic proteins, to essentially generate an albumin molecule with specific biological activity.

Loops in human albumin structure into which peptides or polypeptides may be  
10 inserted to generate albumin fusion proteins of the invention include: Val54-Asn61, Thr76-Asp89, Ala92-Glu100, Gln170-Ala176, His 247 - Glu252, Glu 266 - Glu277, Glu 280-His288, Ala362-Glu368, Lys439-Pro447, Val462-Lys475, Thr478-Pro486, and Lys560-Thr566. In more preferred embodiments, peptides or polypeptides are inserted into the Val54-Asn61, Gln170-Ala176, and/or Lys560-Thr566 loops of mature human  
15 albumin (SEQ ID NO:18).

Peptides to be inserted may be derived from either phage display or synthetic peptide libraries screened for specific biological activity or from the active portions of a molecule with the desired function. Additionally, random peptide libraries may be generated within particular loops or by insertions of randomized peptides into particular  
20 loops of the HA molecule and in which all possible combinations of amino acids are represented.

Such library(s) could be generated on HA or domain fragments of HA by one of the following methods:

(a) randomized mutation of amino acids within one or more peptide loops of  
25 HA or HA domain fragments. Either one, more or all the residues within a loop could be mutated in this manner (for example see Fig. 10a);

(b) replacement of, or insertion into one or more loops of HA or HA domain fragments (*i.e.*, internal fusion) of a randomized peptide(s) of length  $X_n$  (where X is an amino acid and n is the number of residues (for example see Fig. 10b);

30 (c) N-, C- or N- and C- terminal peptide/protein fusions in addition to (a) and/or (b).

The HA or HA domain fragment may also be made multifunctional by grafting the

peptides derived from different screens of different loops against different targets into the same HA or HA domain fragment.

In preferred embodiments, peptides inserted into a loop of human serum albumin are peptide fragments or peptide variants of the Therapeutic proteins disclosed in Table 1.

5 More particularly, the invention encompasses albumin fusion proteins which comprise peptide fragments or peptide variants at least 7 at least 8, at least 9, at least 10, at least 11, at least 12, at least 13, at least 14, at least 15, at least 20, at least 25, at least 30, at least 35, or at least 40 amino acids in length inserted into a loop of human serum albumin. The invention also encompasses albumin fusion proteins which comprise peptide fragments or  
10 peptide variants at least 7 at least 8, at least 9, at least 10, at least 11, at least 12, at least 13, at least 14, at least 15, at least 20, at least 25, at least 30, at least 35, or at least 40 amino acids fused to the N-terminus of human serum albumin. The invention also encompasses albumin fusion proteins which comprise peptide fragments or peptide variants at least 7 at least 8, at least 9, at least 10, at least 11, at least 12, at least 13, at  
15 least 14, at least 15, at least 20, at least 25, at least 30, at least 35, or at least 40 amino acids fused to the C-terminus of human serum albumin.

Generally, the albumin fusion proteins of the invention may have one HA-derived region and one Therapeutic protein-derived region. Multiple regions of each protein, however, may be used to make an albumin fusion protein of the invention. Similarly,  
20 more than one Therapeutic protein may be used to make an albumin fusion protein of the invention. For instance, a Therapeutic protein may be fused to both the N- and C-terminal ends of the HA. In such a configuration, the Therapeutic protein portions may be the same or different Therapeutic protein molecules. The structure of bifunctional albumin fusion proteins may be represented as: X-HA-Y or Y-HA-X.

25 For example, an anti-BLyS™ scFv-HA-IFN $\alpha$ -2b fusion may be prepared to modulate the immune response to IFN $\alpha$ -2b by anti-BLyS™ scFv. An alternative is making a bi (or even multi) functional dose of HA-fusions *e.g.* HA-IFN $\alpha$ -2b fusion mixed with HA-anti-BLyS™ scFv fusion or other HA-fusions in various ratio's depending on function, half-life etc.

30 Bi- or multi-functional albumin fusion proteins may also be prepared to target the Therapeutic protein portion of a fusion to a target organ or cell type via protein or peptide at the opposite terminus of HA.

As an alternative to the fusion of known therapeutic molecules, the peptides could be obtained by screening libraries constructed as fusions to the N-, C- or N- and C- termini of HA, or domain fragment of HA, of typically 6, 8, 12, 20 or 25 or  $X_n$  (where X is an amino acid (aa) and n equals the number of residues) randomized amino acids, and in which all possible combinations of amino acids were represented. A particular advantage of this approach is that the peptides may be selected *in situ* on the HA molecule and the properties of the peptide would therefore be as selected for rather than, potentially, modified as might be the case for a peptide derived by any other method then being attached to HA.

10 Additionally, the albumin fusion proteins of the invention may include a linker peptide between the fused portions to provide greater physical separation between the moieties and thus maximize the accessibility of the Therapeutic protein portion, for instance, for binding to its cognate receptor. The linker peptide may consist of amino acids such that it is flexible or more rigid.

15 The linker sequence may be cleavable by a protease or chemically to yield the growth hormone related moiety. Preferably, the protease is one which is produced naturally by the host, for example the *S. cerevisiae* protease *kex2* or equivalent proteases.

Therefore, as described above, the albumin fusion proteins of the invention may have the following formula R1-L-R2; R2-L-R1; or R1-L-R2-L-R1, wherein R1 is at least one Therapeutic protein, peptide or polypeptide sequence, and not necessarily the same Therapeutic protein, L is a linker and R2 is a serum albumin sequence.

20 In preferred embodiments, Albumin fusion proteins of the invention comprising a Therapeutic protein have extended shelf life compared to the shelf life the same Therapeutic protein when not fused to albumin. Shelf-life typically refers to the time period over which the therapeutic activity of a Therapeutic protein in solution or in some other storage formulation, is stable without undue loss of therapeutic activity. Many of the Therapeutic proteins are highly labile in their unfused state. As described below, the typical shelf-life of these Therapeutic proteins is markedly prolonged upon incorporation into the albumin fusion protein of the invention.

30 Albumin fusion proteins of the invention with "prolonged" or "extended" shelf-life exhibit greater therapeutic activity relative to a standard that has been subjected to the same storage and handling conditions. The standard may be the unfused full-length

Therapeutic protein. When the Therapeutic protein portion of the albumin fusion protein is an analog, a variant, or is otherwise altered or does not include the complete sequence for that protein, the prolongation of therapeutic activity may alternatively be compared to the unfused equivalent of that analog, variant, altered peptide or incomplete sequence. As an example, an albumin fusion protein of the invention may retain greater than about 100% of the therapeutic activity, or greater than about 105%, 110%, 120%, 130%, 150% or 200% of the therapeutic activity of a standard when subjected to the same storage and handling conditions as the standard when compared at a given time point.

Shelf-life may also be assessed in terms of therapeutic activity remaining after storage, normalized to therapeutic activity when storage began. Albumin fusion proteins of the invention with prolonged or extended shelf-life as exhibited by prolonged or extended therapeutic activity may retain greater than about 50% of the therapeutic activity, about 60%, 70%, 80%, or 90% or more of the therapeutic activity of the equivalent unfused Therapeutic protein when subjected to the same conditions. For example, as discussed in Example 1, an albumin fusion protein of the invention comprising hGH fused to the full length HA sequence may retain about 80% or more of its original activity in solution for periods of up to 5 weeks or more under various temperature conditions.

### *Expression of Fusion Proteins*

The albumin fusion proteins of the invention may be produced as recombinant molecules by secretion from yeast, a microorganism such as a bacterium, or a human or animal cell line. Preferably, the polypeptide is secreted from the host cells. We have found that, by fusing the hGH coding sequence to the HA coding sequence, either to the 5' end or 3' end, it is possible to secrete the albumin fusion protein from yeast without the requirement for a yeast-derived pro sequence. This was surprising, as other workers have found that a yeast derived pro sequence was needed for efficient secretion of hGH in yeast.

For example, Hiramatsu *et al.* (Appl Environ Microbiol 56:2125 (1990); Appl Environ Microbiol 57:2052 (1991)) found that the N-terminal portion of the pro sequence in the *Mucor pusillus* rennin pre-pro leader was important. Other authors, using the MF -1 signal, have always included the MF -1 pro sequence when secreting hGH. The pro sequences were believed to assist in the folding of the hGH by acting as an intramolecular



chaperone. The present invention shows that HA or fragments of HA can perform a similar function.

Hence, a particular embodiment of the invention comprises a DNA construct encoding a signal sequence effective for directing secretion in yeast, particularly a yeast-derived signal sequence (especially one which is homologous to the yeast host), and the fused molecule of the first aspect of the invention, there being no yeast-derived pro sequence between the signal and the mature polypeptide.

The *Saccharomyces cerevisiae* invertase signal is a preferred example of a yeast-derived signal sequence.

Conjugates of the kind prepared by Poznansky *et al.*, (FEBS Lett. 239:18 (1988)), in which separately-prepared polypeptides are joined by chemical cross-linking, are not contemplated.

The present invention also includes a cell, preferably a yeast cell transformed to express an albumin fusion protein of the invention. In addition to the transformed host cells themselves, the present invention also contemplates a culture of those cells, preferably a monoclonal (clonally homogeneous) culture, or a culture derived from a monoclonal culture, in a nutrient medium. If the polypeptide is secreted, the medium will contain the polypeptide, with the cells, or without the cells if they have been filtered or centrifuged away. Many expression systems are known and may be used, including bacteria (for example *E. coli* and *Bacillus subtilis*), yeasts (for example *Saccharomyces cerevisiae*, *Kluyveromyces lactis* and *Pichia pastoris*, filamentous fungi (for example *Aspergillus*), plant cells, animal cells and insect cells.

Preferred yeast strains to be used in the production of albumin fusion proteins are D88, DXY1 and BXP10. D88 [*leu2-3, leu2-122, can1, pral, ubc4*] is a derivative of parent strain AH22<sup>his<sup>+</sup></sup> (also known as DB1; see, e.g., Sleep *et al.* Biotechnology 8:42-46 (1990)). The strain contains a *leu2* mutation which allows for auxotrophic selection of 2 micron-based plasmids that contain the LEU2 gene. D88 also exhibits a derepression of PRB1 in glucose excess. The PRB1 promoter is normally controlled by two checkpoints that monitor glucose levels and growth stage. The promoter is activated in wild type yeast upon glucose depletion and entry into stationary phase. Strain D88 exhibits the repression by glucose but maintains the induction upon entry into stationary phase. The PRA1 gene encodes a yeast vacuolar protease, YscA endoprotease A, that is localized in the ER. The

UBC4 gene is in the ubiquitination pathway and is involved in targeting short lived and abnormal proteins for ubiquitin dependant degradation. Isolation of this *ubc4* mutation was found to increase the copy number of an expression plasmid in the cell and cause an increased level of expression of a desired protein expressed from the plasmid (see, e.g.,  
5 International Publication No. WO99/00504, hereby incorporated in its entirety by reference herein).

DXY1, a derivative of D88, has the following genotype: [*leu2-3*, *leu2-122*, *can1*, *pra1*, *ubc4*, *ura3::yap3*]. In addition to the mutations isolated in D88, this strain also has a knockout of the YAP3 protease. This protease causes cleavage of mostly di-basic  
10 residues (RR, RK, KR, KK) but can also promote cleavage at single basic residues in proteins. Isolation of this *yap3* mutation resulted in higher levels of full length HSA production (see, e.g., U.S. Patent No. 5,965,386 and Kerry-Williams et al., Yeast 14:161-169 (1998), hereby incorporated in their entireties by reference herein).

BXP10 has the following genotype: *leu2-3*, *leu2-122*, *can1*, *pra1*, *ubc4*, *ura3*,  
15 *yap3::URA3*, *lys2*, *hsp150::LYS2*, *pmt1::URA3*. In addition to the mutations isolated in DX Y1, this strain also has a knockout of the PMT1 gene and the HSP150 gene. The PMT1 gene is a member of the evolutionarily conserved family of dolichyl-phosphate-D-mannose protein O-mannosyltransferases (Pmts). The transmembrane topology of Pmt1p suggests that it is an integral membrane protein of the endoplasmic reticulum with a role  
20 in O-linked glycosylation. This mutation serves to reduce/eliminate O-linked glycosylation of HSA fusions (see, e.g., International Publication No. WO00/44772, hereby incorporated in its entirety by reference herein). Studies revealed that the Hsp150 protein is inefficiently separated from rHA by ion exchange chromatography. The mutation in the HSP150 gene removes a potential contaminant that has proven difficult to  
25 remove by standard purification techniques. See, e.g., U.S. Patent No. 5,783,423, hereby incorporated in its entirety by reference herein.

The desired protein is produced in conventional ways, for example from a coding sequence inserted in the host chromosome or on a free plasmid. The yeasts are transformed with a coding sequence for the desired protein in any of the usual ways, for  
30 example electroporation. Methods for transformation of yeast by electroporation are disclosed in Becker & Guarente (1990) *Methods Enzymol.* 194, 182.

Successfully transformed cells, *i.e.*, cells that contain a DNA construct of the

present invention, can be identified by well known techniques. For example, cells resulting from the introduction of an expression construct can be grown to produce the desired polypeptide. Cells can be harvested and lysed and their DNA content examined for the presence of the DNA using a method such as that described by Southern (1975) *J. Mol. Biol.* 98, 503 or Berent *et al.* (1985) *Biotech.* 3, 208. Alternatively, the presence of the protein in the supernatant can be detected using antibodies.

Useful yeast plasmid vectors include pRS403-406 and pRS413-416 and are generally available from Stratagene Cloning Systems, La Jolla, CA 92037, USA. Plasmids pRS403, pRS404, pRS405 and pRS406 are Yeast Integrating plasmids (YIps) and incorporate the yeast selectable markers HIS3, 7RP1, LEU2 and URA3. Plasmids pRS413-416 are Yeast Centromere plasmids (Ycps).

Preferred vectors for making albumin fusion proteins for expression in yeast include pPPC0005, pScCHSA, pScNHSA, and pC4:HSA which are described in detail in Example 2. Figure 4 shows a map of the pPPC0005 plasmid that can be used as the base vector into which polynucleotides encoding Therapeutic proteins may be cloned to form HA-fusions. It contains a *PRB1 S. cerevisiae* promoter (PRB1p), a Fusion leader sequence (FL), DNA encoding HA (rHA) and an *ADH1 S. cerevisiae* terminator sequence. The sequence of the fusion leader sequence consists of the first 19 amino acids of the signal peptide of human serum albumin (SEQ ID NO:29) and the last five amino acids of the mating factor alpha 1 promoter (SLDKR, see EP-A-387 319 which is hereby incorporated by reference in its entirety).

The plasmids, pPPC0005, pScCHSA, pScNHSA, and pC4:HSA were deposited on April 11, 2001 at the American Type Culture Collection, 10801 University Boulevard, Manassas, Virginia 20110-2209 and given accession numbers ATCC \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_, respectively. Another vector useful for expressing an albumin fusion protein in yeast the pSAC35 vector which is described in Sleep *et al.*, *BioTechnology* 8:42 (1990) which is hereby incorporated by reference in its entirety.

A variety of methods have been developed to operably link DNA to vectors via complementary cohesive termini. For instance, complementary homopolymer tracts can be added to the DNA segment to be inserted to the vector DNA. The vector and DNA segment are then joined by hydrogen bonding between the complementary homopolymeric tails to form recombinant DNA molecules.

Synthetic linkers containing one or more restriction sites provide an alternative method of joining the DNA segment to vectors. The DNA segment, generated by endonuclease restriction digestion, is treated with bacteriophage T4 DNA polymerase or E. coli DNA polymerase I, enzymes that remove protruding, -single-stranded termini with their 3' 5'-exonucleolytic activities, and fill in recessed 3'-ends with their polymerizing activities.

The combination of these activities therefore generates blunt-ended DNA segments. The blunt-ended segments are then incubated with a large molar excess of linker molecules in the presence of an enzyme that is able to catalyze the ligation of blunt-ended DNA molecules, such as bacteriophage T4 DNA ligase. Thus, the products of the reaction are DNA segments carrying polymeric linker sequences at their ends. These DNA segments are then cleaved with the appropriate restriction enzyme and ligated to an expression vector that has been cleaved with an enzyme that produces termini compatible with those of the DNA segment.

Synthetic linkers containing a variety of restriction endonuclease sites are commercially available from a number of sources including International Biotechnologies Inc, New Haven, CT, USA.

A desirable way to modify the DNA in accordance with the invention, if, for example, HA variants are to be prepared, is to use the polymerase chain reaction as disclosed by Saiki *et al.* (1988) *Science* 239, 487-491. In this method the DNA to be enzymatically amplified is flanked by two specific oligonucleotide primers which themselves become incorporated into the amplified DNA. The specific primers may contain restriction endonuclease recognition sites which can be used for cloning into expression vectors using methods known in the art.

Exemplary genera of yeast contemplated to be useful in the practice of the present invention as hosts for expressing the albumin fusion proteins are *Pichia* (Hansenula), *Saccharomyces*, *Kluyveromyces*, *Candida*, *Torulopsis*, *Torulaspora*, *Schizosaccharomyces*, *Citeromyces*, *Pachysolen*, *Debaromyces*, *Metschnikowia*, *Rhodospiridium*, *Leucosporidium*, *Botryosphaeria*, *Sporidiobolus*, *Endomycopsis*, and the like. Preferred genera are those selected from the group consisting of *Saccharomyces*, *Schizosaccharomyces*, *Kluyveromyces*, *Pichia* and *Torulaspora*. Examples of *Saccharomyces* spp. are *S. cerevisiae*, *S. italicus* and *S. rouxii*.

Examples of *Kluyveromyces* spp. are *K. fragilis*, *K. lactis* and *K. marxianus*. A suitable *Torulaspora* species is *T. delbrueckii*. Examples of *Pichia* (Hansenula) spp. are *P. angusta* (formerly *H. polymorpha*), *P. anomala* (formerly *H. anomala*) and *P. pastoris*. Methods for the transformation of *S. cerevisiae* are taught generally in EP 251 744, EP 5 258 067 and WO 90/01063, all of which are incorporated herein by reference.

Preferred exemplary species of *Saccharomyces* include *S. cerevisiae*, *S. italicus*, *S. diastaticus*, and *Zygosaccharomyces rouxii*. Preferred exemplary species of *Kluyveromyces* include *K. fragilis* and *K. lactis*. Preferred exemplary species of *Hansenula* include *H. polymorpha* (now *Pichia angusta*), *H. anomala* (now *Pichia anomala*), and *Pichia capsulata*. Additional preferred exemplary species of *Pichia* include *P. pastoris*. Preferred exemplary species of *Aspergillus* include *A. niger* and *A. nidulans*. Preferred exemplary species of *Yarrowia* include *Y. lipolytica*. Many preferred yeast species are available from the ATCC. For example, the following preferred yeast species are available from the ATCC and are useful in the expression of albumin fusion proteins: *Saccharomyces cerevisiae* Hansen, teleomorph strain BY4743 *yap3* mutant (ATCC Accession No. 4022731); *Saccharomyces cerevisiae* Hansen, teleomorph strain BY4743 *hsp150* mutant (ATCC Accession No. 4021266); *Saccharomyces cerevisiae* Hansen, teleomorph strain BY4743 *pmt1* mutant (ATCC Accession No. 4023792); *Saccharomyces cerevisiae* Hansen, teleomorph (ATCC Accession Nos. 20626; 44773; 20 44774; and 62995); *Saccharomyces diastaticus* Andrews et Gilliland ex van der Walt, teleomorph (ATCC Accession No. 62987); *Kluyveromyces lactis* (Dombrowski) van der Walt, teleomorph (ATCC Accession No. 76492); *Pichia angusta* (Teunisson et al.) Kurtzman, teleomorph deposited as *Hansenula polymorpha* de Morais et Maia, teleomorph (ATCC Accession No. 26012); *Aspergillus niger* van Tieghem, anamorph (ATCC Accession No. 9029); *Aspergillus niger* van Tieghem, anamorph (ATCC 25 Accession No. 16404); *Aspergillus nidulans* (Eidam) Winter, anamorph (ATCC Accession No. 48756); and *Yarrowia lipolytica* (Wickerham et al.) van der Walt et von Arx, teleomorph (ATCC Accession No. 201847).

Suitable promoters for *S. cerevisiae* include those associated with the PGKI gene, 30 GAL1 or GAL10 genes, CYC1, PHO5, TRP1, ADHI, ADH2, the genes for glyceraldehyde-3-phosphate dehydrogenase, hexokinase, pyruvate decarboxylase, phosphofructokinase, triose phosphate isomerase, phosphoglucose isomerase, glucokinase,

alpha-mating factor pheromone, [a mating factor pheromone], the PRBI promoter, the GUT2 promoter, the GPDI promoter, and hybrid promoters involving hybrids of parts of 5' regulatory regions with parts of 5' regulatory regions of other promoters or with upstream activation sites (e.g. the promoter of EP-A-258 067).

5        Convenient regulatable promoters for use in *Schizosaccharomyces pombe* are the thiamine-repressible promoter from the nmt gene as described by Maundrell (1990) *J. Biol. Chem.* 265, 10857-10864 and the glucose repressible jbp1 gene promoter as described by Hoffman & Winston (1990) *Genetics* 124, 807-816.

10        Methods of transforming *Pichia* for expression of foreign genes are taught in, for example, Cregg *et al.* (1993), and various Phillips patents (e.g. US 4 857 467, incorporated herein by reference), and *Pichia* expression kits are commercially available from Invitrogen BV, Leek, Netherlands, and Invitrogen Corp., San Diego, California. Suitable promoters include AOX1 and AOX2. Gleeson *et al.* (1986) *J. Gen. Microbiol.* 132, 3459-3465 include information on *Hansenula* vectors and transformation, suitable  
15        promoters being MOX1 and FMD1; whilst EP 361 991, Fleer *et al.* (1991) and other publications from Rhone-Poulenc Rorer teach how to express foreign proteins in *Kluyveromyces* spp., a suitable promoter being PGKI.

20        The transcription termination signal is preferably the 3' flanking sequence of a eukaryotic gene which contains proper signals for transcription termination and polyadenylation. Suitable 3' flanking sequences may, for example, be those of the gene naturally linked to the expression control sequence used, *i.e.* may correspond to the promoter. Alternatively, they may be different in which case the termination signal of the *S. cerevisiae* ADHI gene is preferred.

25        The desired albumin fusion protein may be initially expressed with a secretion leader sequence, which may be any leader effective in the yeast chosen. Leaders useful in *S. cerevisiae* include that from the mating factor polypeptide (MF -1) and the hybrid leaders of EP-A-387 319. Such leaders (or signals) are cleaved by the yeast before the mature albumin is released into the surrounding medium. Further such leaders include those of *S. cerevisiae* invertase (SUC2) disclosed in JP 62-096086 (granted as  
30        911036516), acid phosphatase (PH05), the pre-sequence of MFoz-1, 0 glucanase (BGL2) and killer toxin; *S. diastaticus* glucoamylase II; *S. carlsbergensis* -galactosidase (MEL1); *K. lactis* killer toxin; and *Candida glucoamylase*.

### Additional Methods of Recombinant and Synthetic Production of Albumin Fusion Proteins

The present invention also relates to vectors containing a polynucleotide encoding an albumin fusion protein of the present invention, host cells, and the production of albumin fusion proteins by synthetic and recombinant techniques. The vector may be, for example, a phage, plasmid, viral, or retroviral vector. Retroviral vectors may be replication competent or replication defective. In the latter case, viral propagation generally will occur only in complementing host cells.

The polynucleotides encoding albumin fusion proteins of the invention may be joined to a vector containing a selectable marker for propagation in a host. Generally, a plasmid vector is introduced in a precipitate, such as a calcium phosphate precipitate, or in a complex with a charged lipid. If the vector is a virus, it may be packaged in vitro using an appropriate packaging cell line and then transduced into host cells.

The polynucleotide insert should be operatively linked to an appropriate promoter, such as the phage lambda PL promoter, the *E. coli lac*, *trp*, *phoA* and *tac* promoters, the SV40 early and late promoters and promoters of retroviral LTRs, to name a few. Other suitable promoters will be known to the skilled artisan. The expression constructs will further contain sites for transcription initiation, termination, and, in the transcribed region, a ribosome binding site for translation. The coding portion of the transcripts expressed by the constructs will preferably include a translation initiating codon at the beginning and a termination codon (UAA, UGA or UAG) appropriately positioned at the end of the polypeptide to be translated.

As indicated, the expression vectors will preferably include at least one selectable marker. Such markers include dihydrofolate reductase, G418, glutamine synthase, or neomycin resistance for eukaryotic cell culture, and tetracycline, kanamycin or ampicillin resistance genes for culturing in *E. coli* and other bacteria. Representative examples of appropriate hosts include, but are not limited to, bacterial cells, such as *E. coli*, *Streptomyces* and *Salmonella typhimurium* cells; fungal cells, such as yeast cells (e.g., *Saccharomyces cerevisiae* or *Pichia pastoris* (ATCC Accession No. 201178)); insect cells such as *Drosophila* S2 and *Spodoptera Sf9* cells; animal cells such as CHO, COS, NSO, 293, and Bowes melanoma cells; and plant cells. Appropriate culture mediums and

conditions for the above-described host cells are known in the art.

Among vectors preferred for use in bacteria include pQE70, pQE60 and pQE-9, available from QIAGEN, Inc.; pBluescript vectors, Phagescript vectors, pNH8A, pNH16A, pNH18A, pNH46A, available from Stratagene Cloning Systems, Inc.; and ptrc99a, pKK223-3, pKK233-3, pDR540, pRIT5 available from Pharmacia Biotech, Inc. Among preferred eukaryotic vectors are pWLNEO, pSV2CAT, pOG44, pXT1 and pSG available from Stratagene; and pSVK3, pBPV, pMSG and pSVL available from Pharmacia. Preferred expression vectors for use in yeast systems include, but are not limited to pYES2, pYD1, pTEF1/Zeo, pYES2/GS, pPICZ, pGAPZ, pGAPZalph, pPIC9, pPIC3.5, pPHIL-D2, pPHIL-S1, pPIC3.5K, pPIC9K, and PAO815 (all available from Invitrogen, Carlsbad, CA). Other suitable vectors will be readily apparent to the skilled artisan.

In one embodiment, polynucleotides encoding an albumin fusion protein of the invention may be fused to signal sequences which will direct the localization of a protein of the invention to particular compartments of a prokaryotic or eukaryotic cell and/or direct the secretion of a protein of the invention from a prokaryotic or eukaryotic cell. For example, in *E. coli*, one may wish to direct the expression of the protein to the periplasmic space. Examples of signal sequences or proteins (or fragments thereof) to which the albumin fusion proteins of the invention may be fused in order to direct the expression of the polypeptide to the periplasmic space of bacteria include, but are not limited to, the *pelB* signal sequence, the maltose binding protein (MBP) signal sequence, MBP, the *ompA* signal sequence, the signal sequence of the periplasmic *E. coli* heat-labile enterotoxin B-subunit, and the signal sequence of alkaline phosphatase. Several vectors are commercially available for the construction of fusion proteins which will direct the localization of a protein, such as the pMAL series of vectors (particularly the pMAL-p series) available from New England Biolabs. In a specific embodiment, polynucleotides albumin fusion proteins of the invention may be fused to the *pelB* pectate lyase signal sequence to increase the efficiency of expression and purification of such polypeptides in Gram-negative bacteria. See, U.S. Patent Nos. 5,576,195 and 5,846,818, the contents of which are herein incorporated by reference in their entireties.

Examples of signal peptides that may be fused to an albumin fusion protein of the invention in order to direct its secretion in mammalian cells include, but are not limited to, the MPIF-1 signal sequence (e.g., amino acids 1-21 of GenBank Accession number



AAB51134), the stanniocalcin signal sequence (MLQNSAVLLLLVISASA, SEQ ID NO:34), and a consensus signal sequence (MPTWAWWLFLVLLLALWAPARG, SEQ ID NO:35). A suitable signal sequence that may be used in conjunction with baculoviral expression systems is the gp67 signal sequence (e.g., amino acids 1-19 of GenBank Accession Number AAA72759).

Vectors which use glutamine synthase (GS) or DHFR as the selectable markers can be amplified in the presence of the drugs methionine sulfoximine or methotrexate, respectively. An advantage of glutamine synthase based vectors are the availability of cell lines (e.g., the murine myeloma cell line, NSO) which are glutamine synthase negative. Glutamine synthase expression systems can also function in glutamine synthase expressing cells (e.g., Chinese Hamster Ovary (CHO) cells) by providing additional inhibitor to prevent the functioning of the endogenous gene. A glutamine synthase expression system and components thereof are detailed in PCT publications: WO87/04462; WO86/05807; WO89/01036; WO89/10404; and WO91/06657, which are hereby incorporated in their entireties by reference herein. Additionally, glutamine synthase expression vectors can be obtained from Lonza Biologics, Inc. (Portsmouth, NH). Expression and production of monoclonal antibodies using a GS expression system in murine myeloma cells is described in Bebbington *et al.*, *Bio/technology* 10:169(1992) and in Biblia and Robinson *Biotechnol. Prog.* 11:1 (1995) which are herein incorporated by reference.

The present invention also relates to host cells containing the above-described vector constructs described herein, and additionally encompasses host cells containing nucleotide sequences of the invention that are operably associated with one or more heterologous control regions (e.g., promoter and/or enhancer) using techniques known of in the art. The host cell can be a higher eukaryotic cell, such as a mammalian cell (e.g., a human derived cell), or a lower eukaryotic cell, such as a yeast cell, or the host cell can be a prokaryotic cell, such as a bacterial cell. A host strain may be chosen which modulates the expression of the inserted gene sequences, or modifies and processes the gene product in the specific fashion desired. Expression from certain promoters can be elevated in the presence of certain inducers; thus expression of the genetically engineered polypeptide may be controlled. Furthermore, different host cells have characteristics and specific mechanisms for the translational and post-translational processing and modification (e.g., phosphorylation, cleavage) of proteins. Appropriate cell lines can be chosen to ensure the

desired modifications and processing of the foreign protein expressed.

Introduction of the nucleic acids and nucleic acid constructs of the invention into the host cell can be effected by calcium phosphate transfection, DEAE-dextran mediated transfection, cationic lipid-mediated transfection, electroporation, transduction, infection, or other methods. Such methods are described in many standard laboratory manuals, such as Davis et al., Basic Methods In Molecular Biology (1986). It is specifically contemplated that the polypeptides of the present invention may in fact be expressed by a host cell lacking a recombinant vector.

In addition to encompassing host cells containing the vector constructs discussed herein, the invention also encompasses primary, secondary, and immortalized host cells of vertebrate origin, particularly mammalian origin, that have been engineered to delete or replace endogenous genetic material (e.g., the coding sequence corresponding to a Therapeutic protein may be replaced with an albumin fusion protein corresponding to the Therapeutic protein), and/or to include genetic material (e.g., heterologous polynucleotide sequences such as for example, an albumin fusion protein of the invention corresponding to the Therapeutic protein may be included). The genetic material operably associated with the endogenous polynucleotide may activate, alter, and/or amplify endogenous polynucleotides.

In addition, techniques known in the art may be used to operably associate heterologous polynucleotides (e.g., polynucleotides encoding an albumin protein, or a fragment or variant thereof) and/or heterologous control regions (e.g., promoter and/or enhancer) with endogenous polynucleotide sequences encoding a Therapeutic protein via homologous recombination (see, e.g., US Patent Number 5,641,670, issued June 24, 1997; International Publication Number WO 96/29411; International Publication Number WO 94/12650; Koller et al., *Proc. Natl. Acad. Sci. USA* 86:8932-8935 (1989); and Zijlstra et al., *Nature* 342:435-438 (1989), the disclosures of each of which are incorporated by reference in their entireties).

Albumin fusion proteins of the invention can be recovered and purified from recombinant cell cultures by well-known methods including ammonium sulfate or ethanol precipitation, acid extraction, anion or cation exchange chromatography, phosphocellulose chromatography, hydrophobic interaction chromatography, affinity chromatography, hydroxylapatite chromatography, hydrophobic charge interaction chromatography and

lectin chromatography. Most preferably, high performance liquid chromatography ("HPLC") is employed for purification.

In preferred embodiments the albumin fusion proteins of the invention are purified using Anion Exchange Chromatography including, but not limited to, chromatography on  
5 Q-sepharose, DEAE sepharose, poros HQ, poros DEAE, Toyopearl Q, Toyopearl QAE, Toyopearl DEAE, Resource/Source Q and DEAE, Fractogel Q and DEAE columns.

In specific embodiments the albumin fusion proteins of the invention are purified using Cation Exchange Chromatography including, but not limited to, SP-sepharose, CM sepharose, poros HS, poros CM, Toyopearl SP, Toyopearl CM, Resource/Source S and  
10 CM, Fractogel S and CM columns and their equivalents and comparables.

In specific embodiments the albumin fusion proteins of the invention are purified using Hydrophobic Interaction Chromatography including, but not limited to, Phenyl, Butyl, Methyl, Octyl, Hexyl-sepharose, poros Phenyl, Butyl, Methyl, Octyl, Hexyl , Toyopearl Phenyl, Butyl, Methyl, Octyl, Hexyl Resource/Source Phenyl, Butyl, Methyl,  
15 Octyl, Hexyl, Fractogel Phenyl, Butyl, Methyl, Octyl, Hexyl columns and their equivalents and comparables.

In specific embodiments the albumin fusion proteins of the invention are purified using Size Exclusion Chromatography including, but not limited to, sepharose S100, S200, S300, superdex resin columns and their equivalents and comparables.

20 In specific embodiments the albumin fusion proteins of the invention are purified using Affinity Chromatography including, but not limited to, Mimetic Dye affinity, peptide affinity and antibody affinity columns that are selective for either the HSA or the "fusion target" molecules.

In preferred embodiments albumin fusion proteins of the invention are purified  
25 using one or more Chromatography methods listed above. In other preferred embodiments, albumin fusion proteins of the invention are purified using one or more of the following Chromatography columns, Q sepharose FF column, SP Sepharose FF column, Q Sepharose High Performance Column, Blue Sepharose FF column , Blue Column, Phenyl Sepharose FF column, DEAE Sepharose FF, or Methyl Column.

Additionally, albumin fusion proteins of the invention may be purified using the process described in PCT International Publication WO 00/44772 which is herein incorporated by reference in its entirety. One of skill in the art could easily modify the process described therein for use in the purification of albumin fusion proteins of the invention.

Albumin fusion proteins of the present invention may be recovered from: products of chemical synthetic procedures; and products produced by recombinant techniques from a prokaryotic or eukaryotic host, including, for example, bacterial, yeast, higher plant, insect, and mammalian cells. Depending upon the host employed in a recombinant production procedure, the polypeptides of the present invention may be glycosylated or may be non-glycosylated. In addition, albumin fusion proteins of the invention may also include an initial modified methionine residue, in some cases as a result of host-mediated processes. Thus, it is well known in the art that the N-terminal methionine encoded by the translation initiation codon generally is removed with high efficiency from any protein after translation in all eukaryotic cells. While the N-terminal methionine on most proteins also is efficiently removed in most prokaryotes, for some proteins, this prokaryotic removal process is inefficient, depending on the nature of the amino acid to which the N-terminal methionine is covalently linked.

In one embodiment, the yeast *Pichia pastoris* is used to express albumin fusion proteins of the invention in a eukaryotic system. *Pichia pastoris* is a methylotrophic yeast which can metabolize methanol as its sole carbon source. A main step in the methanol metabolism pathway is the oxidation of methanol to formaldehyde using O<sub>2</sub>. This reaction is catalyzed by the enzyme alcohol oxidase. In order to metabolize methanol as its sole carbon source, *Pichia pastoris* must generate high levels of alcohol oxidase due, in part, to the relatively low affinity of alcohol oxidase for O<sub>2</sub>. Consequently, in a growth medium depending on methanol as a main carbon source, the promoter region of one of the two alcohol oxidase genes (*AOX1*) is highly active. In the presence of methanol, alcohol oxidase produced from the *AOX1* gene comprises up to approximately 30% of the total soluble protein in *Pichia pastoris*. See Ellis, S.B., *et al.*, *Mol. Cell. Biol.* 5:1111-21 (1985); Koutz, P.J., *et al.*, *Yeast* 5:167-77 (1989); Tschopp, J.F., *et al.*, *Nucl. Acids Res.* 15:3859-76 (1987). Thus, a heterologous coding sequence, such as, for example, a

polynucleotide of the present invention, under the transcriptional regulation of all or part of the *AOX1* regulatory sequence is expressed at exceptionally high levels in *Pichia* yeast grown in the presence of methanol.

In one example, the plasmid vector pPIC9K is used to express DNA encoding an albumin fusion protein of the invention, as set forth herein, in a *Pichea* yeast system essentially as described in "*Pichia* Protocols: Methods in Molecular Biology," D.R. Higgins and J. Cregg, eds. The Humana Press, Totowa, NJ, 1998. This expression vector allows expression and secretion of a polypeptide of the invention by virtue of the strong *AOX1* promoter linked to the *Pichia pastoris* alkaline phosphatase (PHO) secretory signal peptide (i.e., leader) located upstream of a multiple cloning site.

Many other yeast vectors could be used in place of pPIC9K, such as, pYES2, pYD1, pTEF1/Zeo, pYES2/GS, pPICZ, pGAPZ, pGAPZalpha, pPIC9, pPIC3.5, pHIL-D2, pHIL-S1, pPIC3.5K, and PAO815, as one skilled in the art would readily appreciate, as long as the proposed expression construct provides appropriately located signals for transcription, translation, secretion (if desired), and the like, including an in-frame AUG as required.

In another embodiment, high-level expression of a heterologous coding sequence, such as, for example, a polynucleotide encoding an albumin fusion protein of the present invention, may be achieved by cloning the heterologous polynucleotide of the invention into an expression vector such as, for example, pGAPZ or pGAPZalpha, and growing the yeast culture in the absence of methanol.

In addition, albumin fusion proteins of the invention can be chemically synthesized using techniques known in the art (e.g., see Creighton, 1983, *Proteins: Structures and Molecular Principles*, W.H. Freeman & Co., N.Y., and Hunkapiller et al., *Nature*, 310:105-111 (1984)). For example, a polypeptide corresponding to a fragment of a polypeptide can be synthesized by use of a peptide synthesizer. Furthermore, if desired, nonclassical amino acids or chemical amino acid analogs can be introduced as a substitution or addition into the polypeptide sequence. Non-classical amino acids include, but are not limited to, to the D-isomers of the common amino acids, 2,4-diaminobutyric acid,  $\alpha$ -amino isobutyric acid, 4-aminobutyric acid, Abu, 2-amino butyric acid,  $\gamma$ -Abu, e-Ahx, 6-amino hexanoic acid, Aib, 2-amino isobutyric acid, 3-amino propionic acid,

- ornithine, norleucine, norvaline, hydroxyproline, sarcosine, citrulline, homocitrulline, cysteic acid, t-butylglycine, t-butylalanine, phenylglycine, cyclohexylalanine, b-alanine, fluoro-amino acids, designer amino acids such as b-methyl amino acids, Ca-methyl amino acids, Na-methyl amino acids, and amino acid analogs in general. Furthermore, the amino acid can be D (dextrorotary) or L (levorotary).

The invention encompasses albumin fusion proteins of the present invention which are differentially modified during or after translation, e.g., by glycosylation, acetylation, phosphorylation, amidation, derivatization by known protecting/blocking groups, proteolytic cleavage, linkage to an antibody molecule or other cellular ligand, etc. Any of numerous chemical modifications may be carried out by known techniques, including but not limited, to specific chemical cleavage by cyanogen bromide, trypsin, chymotrypsin, papain, V8 protease, NaBH<sub>4</sub>; acetylation, formylation, oxidation, reduction; metabolic synthesis in the presence of tunicamycin; etc.

Additional post-translational modifications encompassed by the invention include, for example, e.g., N-linked or O-linked carbohydrate chains, processing of N-terminal or C-terminal ends), attachment of chemical moieties to the amino acid backbone, chemical modifications of N-linked or O-linked carbohydrate chains, and addition or deletion of an N-terminal methionine residue as a result of procaryotic host cell expression. The albumin fusion proteins may also be modified with a detectable label, such as an enzymatic, fluorescent, isotopic or affinity label to allow for detection and isolation of the protein.

Examples of suitable enzymes include horseradish peroxidase, alkaline phosphatase, beta-galactosidase, or acetylcholinesterase; examples of suitable prosthetic group complexes include streptavidin/biotin and avidin/biotin; examples of suitable fluorescent materials include umbelliferone, fluorescein, fluorescein isothiocyanate, rhodamine, dichlorotriazinylamine fluorescein, dansyl chloride or phycoerythrin; an example of a luminescent material includes luminol; examples of bioluminescent materials include luciferase, luciferin, and aequorin; and examples of suitable radioactive material include iodine (<sup>121</sup>I, <sup>123</sup>I, <sup>125</sup>I, <sup>131</sup>I), carbon (<sup>14</sup>C), sulfur (<sup>35</sup>S), tritium (<sup>3</sup>H), indium (<sup>111</sup>In, <sup>112</sup>In, <sup>113m</sup>In, <sup>115m</sup>In), technetium (<sup>99</sup>Tc, <sup>99m</sup>Tc), thallium (<sup>201</sup>Tl), gallium (<sup>68</sup>Ga, <sup>67</sup>Ga), palladium (<sup>103</sup>Pd), molybdenum (<sup>99</sup>Mo), xenon (<sup>133</sup>Xe), fluorine (<sup>18</sup>F), <sup>153</sup>Sm, <sup>177</sup>Lu, <sup>159</sup>Gd, <sup>149</sup>Pm, <sup>140</sup>La, <sup>175</sup>Yb, <sup>166</sup>Ho, <sup>90</sup>Y, <sup>47</sup>Sc, <sup>186</sup>Re, <sup>188</sup>Re, <sup>142</sup>Pr, <sup>105</sup>Rh, and <sup>97</sup>Ru.

In specific embodiments, albumin fusion proteins of the present invention or

fragments or variants thereof are attached to macrocyclic chelators that associate with radiometal ions, including but not limited to,  $^{177}\text{Lu}$ ,  $^{90}\text{Y}$ ,  $^{166}\text{Ho}$ , and  $^{153}\text{Sm}$ , to polypeptides.

In a preferred embodiment, the radiometal ion associated with the macrocyclic chelators is  $^{111}\text{In}$ . In another preferred embodiment, the radiometal ion associated with the

5 macrocyclic chelator is  $^{90}\text{Y}$ . In specific embodiments, the macrocyclic chelator is 1,4,7,10-tetraazacyclododecane-N,N',N'',N'''-tetraacetic acid (DOTA). In other specific embodiments, DOTA is attached to an antibody of the invention or fragment thereof via linker molecule. Examples of linker molecules useful for conjugating DOTA to a polypeptide are commonly known in the art - see, for example, DeNardo et al., Clin  
10 Cancer Res. 4(10):2483-90 (1998); Peterson et al., Bioconjug. Chem. 10(4):553-7 (1999); and Zimmerman et al, Nucl. Med. Biol. 26(8):943-50 (1999); which are hereby incorporated by reference in their entirety.

As mentioned, the albumin fusion proteins of the invention may be modified by either natural processes, such as post-translational processing, or by chemical modification  
15 techniques which are well known in the art. It will be appreciated that the same type of modification may be present in the same or varying degrees at several sites in a given polypeptide. Polypeptides of the invention may be branched, for example, as a result of ubiquitination, and they may be cyclic, with or without branching. Cyclic, branched, and branched cyclic polypeptides may result from posttranslation natural processes or may be  
20 made by synthetic methods. Modifications include acetylation, acylation, ADP-ribosylation, amidation, covalent attachment of flavin, covalent attachment of a heme moiety, covalent attachment of a nucleotide or nucleotide derivative, covalent attachment of a lipid or lipid derivative, covalent attachment of phosphatidylinositol, cross-linking, cyclization, disulfide bond formation, demethylation, formation of covalent cross-links,  
25 formation of cysteine, formation of pyroglutamate; formylation, gamma-carboxylation, glycosylation, GPI anchor formation, hydroxylation, iodination, methylation, myristylation, oxidation, pegylation, proteolytic processing, phosphorylation, prenylation, racemization, selenoylation, sulfation, transfer-RNA mediated addition of amino acids to proteins such as arginylation, and ubiquitination. (See, for instance, PROTEINS -  
30 STRUCTURE AND MOLECULAR PROPERTIES, 2nd Ed., T. E. Creighton, W. H. Freeman and Company, New York (1993); POST-TRANSLATIONAL COVALENT MODIFICATION OF PROTEINS, B. C. Johnson, Ed., Academic Press, New York, pgs.

1-12 (1983); Seifter et al., *Meth. Enzymol.* 182:626-646 (1990); Rattan et al., *Ann. N.Y. Acad. Sci.* 663:48-62 (1992)).

Albumin fusion proteins of the invention and antibodies that bind a Therapeutic protein or fragments or variants thereof can be fused to marker sequences, such as a peptide to facilitate purification. In preferred embodiments, the marker amino acid sequence is a hexa-histidine peptide, such as the tag provided in a pQE vector (QIAGEN, Inc., 9259 Eton Avenue, Chatsworth, CA, 91311), among others, many of which are commercially available. As described in Gentz et al., *Proc. Natl. Acad. Sci. USA* 86:821-824 (1989), for instance, hexa-histidine provides for convenient purification of the fusion protein. Other peptide tags useful for purification include, but are not limited to, the "HA" tag, which corresponds to an epitope derived from the influenza hemagglutinin protein (Wilson et al., *Cell* 37:767 (1984)) and the "flag" tag.

Further, an albumin fusion protein of the invention may be conjugated to a therapeutic moiety such as a cytotoxin, e.g., a cytostatic or cytocidal agent, a therapeutic agent or a radioactive metal ion, e.g., alpha-emitters such as, for example, <sup>213</sup>Bi. A cytotoxin or cytotoxic agent includes any agent that is detrimental to cells. Examples include paclitaxol, cytochalasin B, gramicidin D, ethidium bromide, emetine, mitomycin, etoposide, tenoposide, vincristine, vinblastine, colchicin, doxorubicin, daunorubicin, dihydroxy anthracin dione, mitoxantrone, mithramycin, actinomycin D, 1-dehydrotestosterone, glucocorticoids, procaine, tetracaine, lidocaine, propranolol, and puromycin and analogs or homologs thereof. Therapeutic agents include, but are not limited to, antimetabolites (e.g., methotrexate, 6-mercaptopurine, 6-thioguanine, cytarabine, 5-fluorouracil decarbazine), alkylating agents (e.g., mechlorethamine, thioepa chlorambucil, melphalan, carmustine (BSNU) and lomustine (CCNU), cyclophosphamide, busulfan, dibromomannitol, streptozotocin, mitomycin C, and cis-dichlorodiamine platinum (II) (DDP) cisplatin), anthracyclines (e.g., daunorubicin (formerly daunomycin) and doxorubicin), antibiotics (e.g., dactinomycin (formerly actinomycin), bleomycin, mithramycin, and anthramycin (AMC)), and anti-mitotic agents (e.g., vincristine and vinblastine).

The conjugates of the invention can be used for modifying a given biological response, the therapeutic agent or drug moiety is not to be construed as limited to classical chemical therapeutic agents. For example, the drug moiety may be a protein or



polypeptide possessing a desired biological activity. Such proteins may include, for example, a toxin such as abrin, ricin A, pseudomonas exotoxin, or diphtheria toxin; a protein such as tumor necrosis factor, alpha-interferon, beta-interferon, nerve growth factor, platelet derived growth factor, tissue plasminogen activator, an apoptotic agent, e.g., TNF-alpha, TNF-beta, AIM I (See, International Publication No. WO 97/33899), AIM II (See, International Publication No. WO 97/34911), Fas Ligand (Takahashi *et al.*, *Int. Immunol.*, 6:1567-1574 (1994)), VEGI (See, International Publication No. WO 99/23105), a thrombotic agent or an anti-angiogenic agent, e.g., angiostatin or endostatin; or, biological response modifiers such as, for example, lymphokines, interleukin-1 ("IL-1"), interleukin-2 ("IL-2"), interleukin-6 ("IL-6"), granulocyte macrophage colony stimulating factor ("GM-CSF"), granulocyte colony stimulating factor ("G-CSF"), or other growth factors. Techniques for conjugating such therapeutic moiety to proteins (e.g., albumin fusion proteins) are well known in the art.

Albumin fusion proteins may also be attached to solid supports, which are particularly useful for immunoassays or purification of polypeptides that are bound by, that bind to, or associate with albumin fusion proteins of the invention. Such solid supports include, but are not limited to, glass, cellulose, polyacrylamide, nylon, polystyrene, polyvinyl chloride or polypropylene.

Albumin fusion proteins, with or without a therapeutic moiety conjugated to it, administered alone or in combination with cytotoxic factor(s) and/or cytokine(s) can be used as a therapeutic.

In embodiments where the albumin fusion protein of the invention comprises only the VH domain of an antibody that binds a Therapeutic protein, it may be necessary and/or desirable to coexpress the fusion protein with the VL domain of the same antibody that binds a Therapeutic protein, such that the VH-albumin fusion protein and VL protein will associate (either covalently or non-covalently) post-translationally.

In embodiments where the albumin fusion protein of the invention comprises only the VL domain of an antibody that binds a Therapeutic protein, it may be necessary and/or desirable to coexpress the fusion protein with the VH domain of the same antibody that binds a Therapeutic protein, such that the VL-albumin fusion protein and VH protein will associate (either covalently or non-covalently) post-translationally.

Some Therapeutic antibodies are bispecific antibodies, meaning the antibody that

binds a Therapeutic protein is an artificial hybrid antibody having two different heavy/light chain pairs and two different binding sites. In order to create an albumin fusion protein corresponding to that Therapeutic protein, it is possible to create an albumin fusion protein which has an scFv fragment fused to both the N- and C- terminus of the albumin protein moiety. More particularly, the scFv fused to the N-terminus of albumin would correspond to one of the heavy/light (VH/VL) pairs of the original antibody that binds a Therapeutic protein and the scFv fused to the C-terminus of albumin would correspond to the other heavy/light (VH/VL) pair of the original antibody that binds a Therapeutic protein.

Also provided by the invention are chemically modified derivatives of the albumin fusion proteins of the invention which may provide additional advantages such as increased solubility, stability and circulating time of the polypeptide, or decreased immunogenicity (see U.S. Patent No. 4,179,337). The chemical moieties for derivitization may be selected from water soluble polymers such as polyethylene glycol, ethylene glycol/propylene glycol copolymers, carboxymethylcellulose, dextran, polyvinyl alcohol and the like. The albumin fusion proteins may be modified at random positions within the molecule, or at predetermined positions within the molecule and may include one, two, three or more attached chemical moieties.

The polymer may be of any molecular weight, and may be branched or unbranched. For polyethylene glycol, the preferred molecular weight is between about 1 kDa and about 100 kDa (the term "about" indicating that in preparations of polyethylene glycol, some molecules will weigh more, some less, than the stated molecular weight) for ease in handling and manufacturing. Other sizes may be used, depending on the desired therapeutic profile (e.g., the duration of sustained release desired, the effects, if any on biological activity, the ease in handling, the degree or lack of antigenicity and other known effects of the polyethylene glycol to a Therapeutic protein or analog). For example, the polyethylene glycol may have an average molecular weight of about 200, 500, 1000, 1500, 2000, 2500, 3000, 3500, 4000, 4500, 5000, 5500, 6000, 6500, 7000, 7500, 8000, 8500, 9000, 9500, 10,000, 10,500, 11,000, 11,500, 12,000, 12,500, 13,000, 13,500, 14,000, 14,500, 15,000, 15,500, 16,000, 16,500, 17,000, 17,500, 18,000, 18,500, 19,000, 19,500, 20,000, 25,000, 30,000, 35,000, 40,000, 45,000, 50,000, 55,000, 60,000, 65,000, 70,000, 75,000, 80,000, 85,000, 90,000, 95,000, or 100,000 kDa.

As noted above, the polyethylene glycol may have a branched structure. Branched polyethylene glycols are described, for example, in U.S. Patent No. 5,643,575; Morpurgo *et al.*, *Appl. Biochem. Biotechnol.* 56:59-72 (1996); Vorobjev *et al.*, *Nucleosides Nucleotides* 18:2745-2750 (1999); and Caliceti *et al.*, *Bioconjug. Chem.* 10:638-646 (1999), the disclosures of each of which are incorporated herein by reference.

The polyethylene glycol molecules (or other chemical moieties) should be attached to the protein with consideration of effects on functional or antigenic domains of the protein. There are a number of attachment methods available to those skilled in the art, such as, for example, the method disclosed in EP 0 401 384 (coupling PEG to G-CSF), herein incorporated by reference; see also Malik *et al.*, *Exp. Hematol.* 20:1028-1035 (1992), reporting pegylation of GM-CSF using tresyl chloride. For example, polyethylene glycol may be covalently bound through amino acid residues via reactive group, such as a free amino or carboxyl group. Reactive groups are those to which an activated polyethylene glycol molecule may be bound. The amino acid residues having a free amino group may include lysine residues and the N-terminal amino acid residues; those having a free carboxyl group may include aspartic acid residues glutamic acid residues and the C-terminal amino acid residue. Sulfhydryl groups may also be used as a reactive group for attaching the polyethylene glycol molecules. Preferred for therapeutic purposes is attachment at an amino group, such as attachment at the N-terminus or lysine group.

As suggested above, polyethylene glycol may be attached to proteins via linkage to any of a number of amino acid residues. For example, polyethylene glycol can be linked to proteins via covalent bonds to lysine, histidine, aspartic acid, glutamic acid, or cysteine residues. One or more reaction chemistries may be employed to attach polyethylene glycol to specific amino acid residues (e.g., lysine, histidine, aspartic acid, glutamic acid, or cysteine) of the protein or to more than one type of amino acid residue (e.g., lysine, histidine, aspartic acid, glutamic acid, cysteine and combinations thereof) of the protein.

One may specifically desire proteins chemically modified at the N-terminus. Using polyethylene glycol as an illustration of the present composition, one may select from a variety of polyethylene glycol molecules (by molecular weight, branching, etc.), the proportion of polyethylene glycol molecules to protein (polypeptide) molecules in the reaction mix, the type of pegylation reaction to be performed, and the method of obtaining the selected N-terminally pegylated protein. The method of obtaining the N-terminally

pegylated preparation (i.e., separating this moiety from other monopegylated moieties if necessary) may be by purification of the N-terminally pegylated material from a population of pegylated protein molecules. Selective proteins chemically modified at the N-terminus modification may be accomplished by reductive alkylation which exploits  
5 differential reactivity of different types of primary amino groups (lysine versus the N-terminal) available for derivatization in a particular protein. Under the appropriate reaction conditions, substantially selective derivatization of the protein at the N-terminus with a carbonyl group containing polymer is achieved.

As indicated above, pegylation of the albumin fusion proteins of the invention may  
10 be accomplished by any number of means. For example, polyethylene glycol may be attached to the albumin fusion protein either directly or by an intervening linker. Linkerless systems for attaching polyethylene glycol to proteins are described in Delgado et al., Crit. Rev. Thera. Drug Carrier Sys. 9:249-304 (1992); Francis et al., Intern. J. of Hematol. 68:1-18 (1998); U.S. Patent No. 4,002,531; U.S. Patent No. 5,349,052;  
15 WO 95/06058; and WO 98/32466, the disclosures of each of which are incorporated herein by reference.

One system for attaching polyethylene glycol directly to amino acid residues of proteins without an intervening linker employs tresylated MPEG, which is produced by the modification of monmethoxy polyethylene glycol (MPEG) using tresylchloride  
20 ( $\text{ClSO}_2\text{CH}_2\text{CF}_3$ ). Upon reaction of protein with tresylated MPEG, polyethylene glycol is directly attached to amine groups of the protein. Thus, the invention includes protein-polyethylene glycol conjugates produced by reacting proteins of the invention with a polyethylene glycol molecule having a 2,2,2-trifluoroethane sulphonyl group.

Polyethylene glycol can also be attached to proteins using a number of different  
25 intervening linkers. For example, U.S. Patent No. 5,612,460, the entire disclosure of which is incorporated herein by reference, discloses urethane linkers for connecting polyethylene glycol to proteins. Protein-polyethylene glycol conjugates wherein the polyethylene glycol is attached to the protein by a linker can also be produced by reaction of proteins with compounds such as MPEG-succinimidylsuccinate, MPEG activated with  
30 1,1'-carbonyldiimidazole, MPEG-2,4,5-trichloropenylcarbonate, MPEG-p-nitrophenolcarbonate, and various MPEG-succinate derivatives. A number of additional polyethylene glycol derivatives and reaction chemistries for attaching polyethylene glycol

to proteins are described in International Publication No. WO 98/32466, the entire disclosure of which is incorporated herein by reference. Pegylated protein products produced using the reaction chemistries set out herein are included within the scope of the invention.

5           The number of polyethylene glycol moieties attached to each albumin fusion protein of the invention (i.e., the degree of substitution) may also vary. For example, the pegylated proteins of the invention may be linked, on average, to 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 17, 20, or more polyethylene glycol molecules. Similarly, the average degree of substitution within ranges such as 1-3, 2-4, 3-5, 4-6, 5-7, 6-8, 7-9, 8-10, 9-11, 10-12,  
10 11-13, 12-14, 13-15, 14-16, 15-17, 16-18, 17-19, or 18-20 polyethylene glycol moieties per protein molecule. Methods for determining the degree of substitution are discussed, for example, in Delgado et al., Crit. Rev. Thera. Drug Carrier Sys. 9:249-304 (1992).

          The polypeptides of the invention can be recovered and purified from chemical synthesis and recombinant cell cultures by standard methods which include, but are not  
15 limited to, ammonium sulfate or ethanol precipitation, acid extraction, anion or cation exchange chromatography, phosphocellulose chromatography, hydrophobic interaction chromatography, affinity chromatography, hydroxylapatite chromatography and lectin chromatography. Most preferably, high performance liquid chromatography ("HPLC") is employed for purification. Well known techniques for refolding protein may be employed  
20 to regenerate active conformation when the polypeptide is denatured during isolation and/or purification.

The presence and quantity of albumin fusion proteins of the invention may be determined using ELISA, a well known immunoassay known in the art. In one ELISA protocol that would be useful for detecting/quantifying albumin fusion proteins of the invention, comprises the steps of coating an ELISA plate with an anti-human serum  
5 albumin antibody, blocking the plate to prevent non-specific binding, washing the ELISA plate, adding a solution containing the albumin fusion protein of the invention (at one or more different concentrations), adding a secondary anti-Therapeutic protein specific antibody coupled to a detectable label (as described herein or otherwise known in the art), and detecting the presence of the secondary antibody. In an alternate version of this  
10 protocol, the ELISA plate might be coated with the anti-Therapeutic protein specific antibody and the labeled secondary reagent might be the anti-human albumin specific antibody.

#### **Uses of the Polynucleotides**

15 Each of the polynucleotides identified herein can be used in numerous ways as reagents. The following description should be considered exemplary and utilizes known techniques.

The polynucleotides of the present invention are useful to produce the albumin fusion proteins of the invention. As described in more detail below, polynucleotides of the  
20 invention (encoding albumin fusion proteins) may be used in recombinant DNA methods useful in genetic engineering to make cells, cell lines, or tissues that express the albumin fusion protein encoded by the polynucleotides encoding albumin fusion proteins of the invention.

Polynucleotides of the present invention are also useful in gene therapy. One goal  
25 of gene therapy is to insert a normal gene into an organism having a defective gene, in an effort to correct the genetic defect. The polynucleotides disclosed in the present invention offer a means of targeting such genetic defects in a highly accurate manner. Another goal is to insert a new gene that was not present in the host genome, thereby producing a new trait in the host cell. Additional non-limiting examples of gene therapy methods  
30 encompassed by the present invention are more thoroughly described elsewhere herein (see, e.g., the sections labeled "Gene Therapy", and Examples 17 and 18).

**Uses of the Polypeptides**

Each of the polypeptides identified herein can be used in numerous ways. The following description should be considered exemplary and utilizes known techniques.

Albumin fusion proteins of the invention are useful to provide immunological probes for differential identification of the tissue(s) (e.g., immunohistochemistry assays such as, for example, ABC immunoperoxidase (Hsu et al., J. Histochem. Cytochem. 29:577-580 (1981)) or cell type(s) (e.g., immunocytochemistry assays).

Albumin fusion proteins can be used to assay levels of polypeptides in a biological sample using classical immunohistological methods known to those of skill in the art (e.g., see Jalkanen, et al., J. Cell. Biol. 101:976-985 (1985); Jalkanen, et al., J. Cell. Biol. 105:3087-3096 (1987)). Other methods useful for detecting protein gene expression include immunoassays, such as the enzyme linked immunosorbent assay (ELISA) and the radioimmunoassay (RIA). Suitable assay labels are known in the art and include enzyme labels, such as, glucose oxidase; radioisotopes, such as iodine ( $^{131}\text{I}$ ,  $^{125}\text{I}$ ,  $^{123}\text{I}$ ,  $^{121}\text{I}$ ), carbon ( $^{14}\text{C}$ ), sulfur ( $^{35}\text{S}$ ), tritium ( $^3\text{H}$ ), indium ( $^{115\text{m}}\text{In}$ ,  $^{113\text{m}}\text{In}$ ,  $^{112}\text{In}$ ,  $^{111}\text{In}$ ), and technetium ( $^{99}\text{Tc}$ ,  $^{99\text{m}}\text{Tc}$ ), thallium ( $^{201}\text{Tl}$ ), gallium ( $^{68}\text{Ga}$ ,  $^{67}\text{Ga}$ ), palladium ( $^{103}\text{Pd}$ ), molybdenum ( $^{99}\text{Mo}$ ), xenon ( $^{133}\text{Xe}$ ), fluorine ( $^{18}\text{F}$ ),  $^{153}\text{Sm}$ ,  $^{177}\text{Lu}$ ,  $^{159}\text{Gd}$ ,  $^{149}\text{Pm}$ ,  $^{140}\text{La}$ ,  $^{175}\text{Yb}$ ,  $^{166}\text{Ho}$ ,  $^{90}\text{Y}$ ,  $^{47}\text{Sc}$ ,  $^{186}\text{Re}$ ,  $^{188}\text{Re}$ ,  $^{142}\text{Pr}$ ,  $^{105}\text{Rh}$ ,  $^{97}\text{Ru}$ ; luminescent labels, such as luminol; and fluorescent labels, such as fluorescein and rhodamine, and biotin.

Albumin fusion proteins of the invention can also be detected *in vivo* by imaging. Labels or markers for *in vivo* imaging of protein include those detectable by X-radiography, nuclear magnetic resonance (NMR) or electron spin relaxation (ESR). For X-radiography, suitable labels include radioisotopes such as barium or cesium, which emit detectable radiation but are not overtly harmful to the subject. Suitable markers for NMR and ESR include those with a detectable characteristic spin, such as deuterium, which may be incorporated into the albumin fusion protein by labeling of nutrients given to a cell line expressing the albumin fusion protein of the invention.

An albumin fusion protein which has been labeled with an appropriate detectable imaging moiety, such as a radioisotope (for example,  $^{131}\text{I}$ ,  $^{112}\text{In}$ ,  $^{99\text{m}}\text{Tc}$ , ( $^{131}\text{I}$ ,  $^{125}\text{I}$ ,  $^{123}\text{I}$ ,  $^{121}\text{I}$ ), carbon ( $^{14}\text{C}$ ), sulfur ( $^{35}\text{S}$ ), tritium ( $^3\text{H}$ ), indium ( $^{115\text{m}}\text{In}$ ,  $^{113\text{m}}\text{In}$ ,  $^{112}\text{In}$ ,  $^{111}\text{In}$ ), and technetium ( $^{99}\text{Tc}$ ,  $^{99\text{m}}\text{Tc}$ ), thallium ( $^{201}\text{Tl}$ ), gallium ( $^{68}\text{Ga}$ ,  $^{67}\text{Ga}$ ), palladium ( $^{103}\text{Pd}$ ), molybdenum ( $^{99}\text{Mo}$ ), xenon ( $^{133}\text{Xe}$ ), fluorine ( $^{18}\text{F}$ ,  $^{153}\text{Sm}$ ,  $^{177}\text{Lu}$ ,  $^{159}\text{Gd}$ ,  $^{149}\text{Pm}$ ,  $^{140}\text{La}$ ,  $^{175}\text{Yb}$ ,  $^{166}\text{Ho}$ ,  $^{90}\text{Y}$ ,

<sup>47</sup>Sc, <sup>186</sup>Re, <sup>188</sup>Re, <sup>142</sup>Pr, <sup>105</sup>Rh, <sup>97</sup>Ru), a radio-opaque substance, or a material detectable by nuclear magnetic resonance, is introduced (for example, parenterally, subcutaneously or intraperitoneally) into the mammal to be examined for immune system disorder. It will be understood in the art that the size of the subject and the imaging system used will determine the quantity of imaging moiety needed to produce diagnostic images. In the case of a radioisotope moiety, for a human subject, the quantity of radioactivity injected will normally range from about 5 to 20 millicuries of <sup>99m</sup>Tc. The labeled albumin fusion protein will then preferentially accumulate at locations in the body (e.g., organs, cells, extracellular spaces or matrices) where one or more receptors, ligands or substrates (corresponding to that of the Therapeutic protein used to make the albumin fusion protein of the invention) are located. Alternatively, in the case where the albumin fusion protein comprises at least a fragment or variant of a Therapeutic antibody, the labeled albumin fusion protein will then preferentially accumulate at the locations in the body (e.g., organs, cells, extracellular spaces or matrices) where the polypeptides/epitopes corresponding to those bound by the Therapeutic antibody (used to make the albumin fusion protein of the invention) are located. *In vivo* tumor imaging is described in S.W. Burchiel et al., "Immunopharmacokinetics of Radiolabeled Antibodies and Their Fragments" (Chapter 13 in *Tumor Imaging: The Radiochemical Detection of Cancer*, S.W. Burchiel and B. A. Rhodes, eds., Masson Publishing Inc. (1982)). The protocols described therein could easily be modified by one of skill in the art for use with the albumin fusion proteins of the invention.

In one embodiment, the invention provides a method for the specific delivery of albumin fusion proteins of the invention to cells by administering albumin fusion proteins of the invention (e.g., polypeptides encoded by polynucleotides encoding albumin fusion proteins of the invention and/or antibodies) that are associated with heterologous polypeptides or nucleic acids. In one example, the invention provides a method for delivering a Therapeutic protein into the targeted cell. In another example, the invention provides a method for delivering a single stranded nucleic acid (e.g., antisense or ribozymes) or double stranded nucleic acid (e.g., DNA that can integrate into the cell's genome or replicate episomally and that can be transcribed) into the targeted cell.

In another embodiment, the invention provides a method for the specific destruction of cells (e.g., the destruction of tumor cells) by administering albumin fusion



proteins of the invention in association with toxins or cytotoxic prodrugs.

By "toxin" is meant one or more compounds that bind and activate endogenous cytotoxic effector systems, radioisotopes, holotoxins, modified toxins, catalytic subunits of toxins, or any molecules or enzymes not normally present in or on the surface of a cell that under defined conditions cause the cell's death. Toxins that may be used according to the methods of the invention include, but are not limited to, radioisotopes known in the art, compounds such as, for example, antibodies (or complement fixing containing portions thereof) that bind an inherent or induced endogenous cytotoxic effector system, thymidine kinase, endonuclease, RNase, alpha toxin, ricin, abrin, *Pseudomonas* exotoxin A, diphtheria toxin, saporin, momordin, gelonin, pokeweed antiviral protein, alpha-sarcin and cholera toxin. "Toxin" also includes a cytostatic or cytocidal agent, a therapeutic agent or a radioactive metal ion, e.g., alpha-emitters such as, for example,  $^{213}\text{Bi}$ , or other radioisotopes such as, for example,  $^{103}\text{Pd}$ ,  $^{133}\text{Xe}$ ,  $^{131}\text{I}$ ,  $^{68}\text{Ge}$ ,  $^{57}\text{Co}$ ,  $^{65}\text{Zn}$ ,  $^{85}\text{Sr}$ ,  $^{32}\text{P}$ ,  $^{35}\text{S}$ ,  $^{90}\text{Y}$ ,  $^{153}\text{Sm}$ ,  $^{153}\text{Gd}$ ,  $^{169}\text{Yb}$ ,  $^{51}\text{Cr}$ ,  $^{54}\text{Mn}$ ,  $^{75}\text{Se}$ ,  $^{113}\text{Sn}$ ,  $^{90}\text{Yttrium}$ ,  $^{117}\text{Tin}$ ,  $^{186}\text{Rhenium}$ ,  $^{166}\text{Holmium}$ , and  $^{188}\text{Rhenium}$ ; luminescent labels, such as luminol; and fluorescent labels, such as fluorescein and rhodamine, and biotin. In a specific embodiment, the invention provides a method for the specific destruction of cells (e.g., the destruction of tumor cells) by administering polypeptides of the invention or antibodies of the invention in association with the radioisotope  $^{90}\text{Y}$ . In another specific embodiment, the invention provides a method for the specific destruction of cells (e.g., the destruction of tumor cells) by administering polypeptides of the invention or antibodies of the invention in association with the radioisotope  $^{111}\text{In}$ . In a further specific embodiment, the invention provides a method for the specific destruction of cells (e.g., the destruction of tumor cells) by administering polypeptides of the invention or antibodies of the invention in association with the radioisotope  $^{131}\text{I}$ .

Techniques known in the art may be applied to label polypeptides of the invention. Such techniques include, but are not limited to, the use of bifunctional conjugating agents (see e.g., U.S. Patent Nos. 5,756,065; 5,714,631; 5,696,239; 5,652,361; 5,505,931; 5,489,425; 5,435,990; 5,428,139; 5,342,604; 5,274,119; 4,994,560; and 5,808,003; the contents of each of which are hereby incorporated by reference in its entirety).

The albumin fusion proteins of the present invention are useful for diagnosis, treatment, prevention and/or prognosis of various disorders in mammals, preferably

humans. Such disorders include, but are not limited to, those described herein under the section heading "Biological Activities," below.

Thus, the invention provides a diagnostic method of a disorder, which involves (a) assaying the expression level of a certain polypeptide in cells or body fluid of an individual using an albumin fusion protein of the invention; and (b) comparing the assayed polypeptide expression level with a standard polypeptide expression level, whereby an increase or decrease in the assayed polypeptide expression level compared to the standard expression level is indicative of a disorder. With respect to cancer, the presence of a relatively high amount of transcript in biopsied tissue from an individual may indicate a predisposition for the development of the disease, or may provide a means for detecting the disease prior to the appearance of actual clinical symptoms. A more definitive diagnosis of this type may allow health professionals to employ preventative measures or aggressive treatment earlier thereby preventing the development or further progression of the cancer.

Moreover, albumin fusion proteins of the present invention can be used to treat or prevent diseases or conditions such as, for example, neural disorders, immune system disorders, muscular disorders, reproductive disorders, gastrointestinal disorders, pulmonary disorders, cardiovascular disorders, renal disorders, proliferative disorders, and/or cancerous diseases and conditions. For example, patients can be administered a polypeptide of the present invention in an effort to replace absent or decreased levels of the polypeptide (e.g., insulin), to supplement absent or decreased levels of a different polypeptide (e.g., hemoglobin S for hemoglobin B, SOD, catalase, DNA repair proteins), to inhibit the activity of a polypeptide (e.g., an oncogene or tumor suppressor), to activate the activity of a polypeptide (e.g., by binding to a receptor), to reduce the activity of a membrane bound receptor by competing with it for free ligand (e.g., soluble TNF receptors used in reducing inflammation), or to bring about a desired response (e.g., blood vessel growth inhibition, enhancement of the immune response to proliferative cells or tissues).

In particular, albumin fusion proteins comprising of at least a fragment or variant of a Therapeutic antibody can also be used to treat disease (as described *supra*, and elsewhere herein). For example, administration of an albumin fusion protein comprising of at least a fragment or variant of a Therapeutic antibody can bind, and/or neutralize the polypeptide to which the Therapeutic antibody used to make the albumin fusion protein

specifically binds, and/or reduce overproduction of the polypeptide to which the Therapeutic antibody used to make the albumin fusion protein specifically binds. Similarly, administration of an albumin fusion protein comprising of at least a fragment or variant of a Therapeutic antibody can activate the polypeptide to which the Therapeutic antibody used to make the albumin fusion protein specifically binds, by binding to the polypeptide bound to a membrane (receptor).

At the very least, the albumin fusion proteins of the invention of the present invention can be used as molecular weight markers on SDS-PAGE gels or on molecular sieve gel filtration columns using methods well known to those of skill in the art. Albumin fusion proteins of the invention can also be used to raise antibodies, which in turn may be used to measure protein expression of the Therapeutic protein, albumin protein, and/or the albumin fusion protein of the invention from a recombinant cell, as a way of assessing transformation of the host cell, or in a biological sample. Moreover, the albumin fusion proteins of the present invention can be used to test the biological activities described herein.

#### *Diagnostic Assays*

The compounds of the present invention are useful for diagnosis, treatment, prevention and/or prognosis of various disorders in mammals, preferably humans. Such disorders include, but are not limited to, those described for each Therapeutic protein in the corresponding row of Table 1 and herein under the section headings "Immune Activity," "Blood Related Disorders," "Hyperproliferative Disorders," "Renal Disorders," "Cardiovascular Disorders," "Respiratory Disorders," "Anti-Angiogenesis Activity," "Diseases at the Cellular Level," "Wound Healing and Epithelial Cell Proliferation," "Neural Activity and Neurological Diseases," "Endocrine Disorders," "Reproductive System Disorders," "Infectious Disease," "Regeneration," and/or "Gastrointestinal Disorders," *infra*.

For a number of disorders, substantially altered (increased or decreased) levels of gene expression can be detected in tissues, cells or bodily fluids (e.g., sera, plasma, urine; semen, synovial fluid or spinal fluid) taken from an individual having such a disorder, relative to a "standard" gene expression level, that is, the expression level in tissues or bodily fluids from an individual not having the disorder. Thus, the invention provides a

diagnostic method useful during diagnosis of a disorder, which involves measuring the expression level of the gene encoding a polypeptide in tissues, cells or body fluid from an individual and comparing the measured gene expression level with a standard gene expression level, whereby an increase or decrease in the gene expression level(s) compared to the standard is indicative of a disorder. These diagnostic assays may be performed *in vivo* or *in vitro*, such as, for example, on blood samples, biopsy tissue or autopsy tissue.

The present invention is also useful as a prognostic indicator, whereby patients exhibiting enhanced or depressed gene expression will experience a worse clinical outcome

By "assaying the expression level of the gene encoding a polypeptide" is intended qualitatively or quantitatively measuring or estimating the level of a particular polypeptide (e.g. a polypeptide corresponding to a Therapeutic protein disclosed in Table 1) or the level of the mRNA encoding the polypeptide of the invention in a first biological sample either directly (e.g., by determining or estimating absolute protein level or mRNA level) or relatively (e.g., by comparing to the polypeptide level or mRNA level in a second biological sample). Preferably, the polypeptide expression level or mRNA level in the first biological sample is measured or estimated and compared to a standard polypeptide level or mRNA level, the standard being taken from a second biological sample obtained from an individual not having the disorder or being determined by averaging levels from a population of individuals not having the disorder. As will be appreciated in the art, once a standard polypeptide level or mRNA level is known, it can be used repeatedly as a standard for comparison.

By "biological sample" is intended any biological sample obtained from an individual, cell line, tissue culture, or other source containing polypeptides of the invention (including portions thereof) or mRNA. As indicated, biological samples include body fluids (such as sera, plasma, urine, synovial fluid and spinal fluid) and tissue sources found to express the full length or fragments thereof of a polypeptide or mRNA. Methods for obtaining tissue biopsies and body fluids from mammals are well known in the art. Where the biological sample is to include mRNA, a tissue biopsy is the preferred source.

Total cellular RNA can be isolated from a biological sample using any suitable technique such as the single-step guanidinium-thiocyanate-phenol-chloroform method

described in Chomczynski and Sacchi, *Anal. Biochem.* 162:156-159 (1987). Levels of mRNA encoding the polypeptides of the invention are then assayed using any appropriate method. These include Northern blot analysis, S1 nuclease mapping, the polymerase chain reaction (PCR), reverse transcription in combination with the polymerase chain reaction (RT-PCR), and reverse transcription in combination with the ligase chain reaction (RT-LCR).

The present invention also relates to diagnostic assays such as quantitative and diagnostic assays for detecting levels of polypeptides that bind to, are bound by, or associate with albumin fusion proteins of the invention, in a biological sample (e.g., cells and tissues), including determination of normal and abnormal levels of polypeptides. Thus, for instance, a diagnostic assay in accordance with the invention for detecting abnormal expression of polypeptides that bind to, are bound by, or associate with albumin fusion proteins compared to normal control tissue samples may be used to detect the presence of tumors. Assay techniques that can be used to determine levels of a polypeptide that bind to, are bound by, or associate with albumin fusion proteins of the present invention in a sample derived from a host are well-known to those of skill in the art. Such assay methods include radioimmunoassays, competitive-binding assays, Western Blot analysis and ELISA assays. Assaying polypeptide levels in a biological sample can occur using any art-known method.

Assaying polypeptide levels in a biological sample can occur using a variety of techniques. For example, polypeptide expression in tissues can be studied with classical immunohistological methods (Jalkanen et al., *J. Cell. Biol.* 101:976-985 (1985); Jalkanen, M., et al., *J. Cell. Biol.* 105:3087-3096 (1987)). Other methods useful for detecting polypeptide gene expression include immunoassays, such as the enzyme linked immunosorbent assay (ELISA) and the radioimmunoassay (RIA). Suitable antibody assay labels are known in the art and include enzyme labels, such as, glucose oxidase, and radioisotopes, such as iodine ( $^{125}\text{I}$ ,  $^{121}\text{I}$ ), carbon ( $^{14}\text{C}$ ), sulfur ( $^{35}\text{S}$ ), tritium ( $^3\text{H}$ ), indium ( $^{112}\text{In}$ ), and technetium ( $^{99\text{m}}\text{Tc}$ ), and fluorescent labels, such as fluorescein and rhodamine, and biotin.

The tissue or cell type to be analyzed will generally include those which are known, or suspected, to express the gene of interest (such as, for example, cancer). The protein isolation methods employed herein may, for example, be such as those described

in Harlow and Lane (Harlow, E. and Lane, D., 1988, "Antibodies: A Laboratory Manual", Cold Spring Harbor Laboratory Press, Cold Spring Harbor, New York), which is incorporated herein by reference in its entirety. The isolated cells can be derived from cell culture or from a patient. The analysis of cells taken from culture may be a necessary step  
5 in the assessment of cells that could be used as part of a cell-based gene therapy technique or, alternatively, to test the effect of compounds on the expression of the gene.

For example, albumin fusion proteins may be used to quantitatively or qualitatively detect the presence of polypeptides that bind to, are bound by, or associate with albumin fusion proteins of the present invention. This can be accomplished, for example, by  
10 immunofluorescence techniques employing a fluorescently labeled albumin fusion protein coupled with light microscopic, flow cytometric, or fluorimetric detection.

In a preferred embodiment, albumin fusion proteins comprising at least a fragment or variant of an antibody that specifically binds at least a Therapeutic protein disclosed herein (e.g., the Therapeutic proteins disclosed in Table 1) or otherwise known in the art  
15 may be used to quantitatively or qualitatively detect the presence of gene products or conserved variants or peptide fragments thereof. This can be accomplished, for example, by immunofluorescence techniques employing a fluorescently labeled antibody coupled with light microscopic, flow cytometric, or fluorimetric detection.

The albumin fusion proteins of the present invention may, additionally, be  
20 employed histologically, as in immunofluorescence, immunoelectron microscopy or non-immunological assays, for in situ detection of polypeptides that bind to, are bound by, or associate with an albumin fusion protein of the present invention. In situ detection may be accomplished by removing a histological specimen from a patient, and applying thereto a labeled antibody or polypeptide of the present invention. The albumin fusion proteins  
25 are preferably applied by overlaying the labeled albumin fusion proteins onto a biological sample. Through the use of such a procedure, it is possible to determine not only the presence of the polypeptides that bind to, are bound by, or associate with albumin fusion proteins, but also its distribution in the examined tissue. Using the present invention, those of ordinary skill will readily perceive that any of a wide variety of histological  
30 methods (such as staining procedures) can be modified in order to achieve such in situ detection.

Immunoassays and non-immunoassays that detect polypeptides that bind to, are

bound by, or associate with albumin fusion proteins will typically comprise incubating a sample, such as a biological fluid, a tissue extract, freshly harvested cells, or lysates of cells which have been incubated in cell culture, in the presence of a detectably labeled antibody capable of binding gene products or conserved variants or peptide fragments thereof, and detecting the bound antibody by any of a number of techniques well-known in the art.

The biological sample may be brought in contact with and immobilized onto a solid phase support or carrier such as nitrocellulose, or other solid support which is capable of immobilizing cells, cell particles or soluble proteins. The support may then be washed with suitable buffers followed by treatment with the detectably labeled albumin fusion protein of the invention. The solid phase support may then be washed with the buffer a second time to remove unbound antibody or polypeptide. Optionally the antibody is subsequently labeled. The amount of bound label on solid support may then be detected by conventional means.

By "solid phase support or carrier" is intended any support capable of binding a polypeptide (e.g., an albumin fusion protein, or polypeptide that binds, is bound by, or associates with an albumin fusion protein of the invention.) Well-known supports or carriers include glass, polystyrene, polypropylene, polyethylene, dextran, nylon, amylases, natural and modified celluloses, polyacrylamides, gabbros, and magnetite. The nature of the carrier can be either soluble to some extent or insoluble for the purposes of the present invention. The support material may have virtually any possible structural configuration so long as the coupled molecule is capable of binding to a polypeptide. Thus, the support configuration may be spherical, as in a bead, or cylindrical, as in the inside surface of a test tube, or the external surface of a rod. Alternatively, the surface may be flat such as a sheet, test strip, etc. Preferred supports include polystyrene beads. Those skilled in the art will know many other suitable carriers for binding antibody or antigen, or will be able to ascertain the same by use of routine experimentation.

The binding activity of a given lot of albumin fusion protein may be determined according to well known methods. Those skilled in the art will be able to determine operative and optimal assay conditions for each determination by employing routine experimentation.

In addition to assaying polypeptide levels in a biological sample obtained from an

individual, polypeptide can also be detected *in vivo* by imaging. For example, in one embodiment of the invention, albumin fusion proteins of the invention are used to image diseased or neoplastic cells.

Labels or markers for *in vivo* imaging of albumin fusion proteins of the invention  
5 include those detectable by X-radiography, NMR, MRI, CAT-scans or ESR. For X-radiography, suitable labels include radioisotopes such as barium or cesium, which emit detectable radiation but are not overtly harmful to the subject. Suitable markers for NMR and ESR include those with a detectable characteristic spin, such as deuterium, which may be incorporated into the albumin fusion protein by labeling of nutrients of a cell line (or  
10 bacterial or yeast strain) engineered.

Additionally, albumin fusion proteins of the invention whose presence can be detected, can be administered. For example, albumin fusion proteins of the invention labeled with a radio-opaque or other appropriate compound can be administered and visualized *in vivo*, as discussed, above for labeled antibodies. Further, such polypeptides  
15 can be utilized for *in vitro* diagnostic procedures.

A polypeptide-specific antibody or antibody fragment which has been labeled with an appropriate detectable imaging moiety, such as a radioisotope (for example,  $^{131}\text{I}$ ,  $^{112}\text{In}$ ,  $^{99\text{m}}\text{Tc}$ ), a radio-opaque substance, or a material detectable by nuclear magnetic resonance, is introduced (for example, parenterally, subcutaneously or intraperitoneally) into the  
20 mammal to be examined for a disorder. It will be understood in the art that the size of the subject and the imaging system used will determine the quantity of imaging moiety needed to produce diagnostic images. In the case of a radioisotope moiety, for a human subject, the quantity of radioactivity injected will normally range from about 5 to 20 millicuries of  $^{99\text{m}}\text{Tc}$ . The labeled albumin fusion protein will then preferentially accumulate at the  
25 locations in the body which contain a polypeptide or other substance that binds to, is bound by or associates with an albumin fusion protein of the present invention. *In vivo* tumor imaging is described in S.W. Burchiel et al., "Immunopharmacokinetics of Radiolabeled Antibodies and Their Fragments" (Chapter 13 in *Tumor Imaging: The Radiochemical Detection of Cancer*, S.W. Burchiel and B. A. Rhodes, eds., Masson  
30 Publishing Inc. (1982)).

One of the ways in which an albumin fusion protein of the present invention can be detectably labeled is by linking the same to a reporter enzyme and using the linked product



in an enzyme immunoassay (EIA) (Voller, A., "The Enzyme Linked Immunosorbent Assay (ELISA)", 1978, Diagnostic Horizons 2:1-7, Microbiological Associates Quarterly Publication, Walkersville, MD); Voller et al., *J. Clin. Pathol.* 31:507-520 (1978); Butler, J.E., *Meth. Enzymol.* 73:482-523 (1981); Maggio, E. (ed.), 1980, Enzyme Immunoassay, CRC Press, Boca Raton, FL.; Ishikawa, E. et al., (eds.), 1981, Enzyme Immunoassay, 5 Kigaku Shoin, Tokyo). The reporter enzyme which is bound to the antibody will react with an appropriate substrate, preferably a chromogenic substrate, in such a manner as to produce a chemical moiety which can be detected, for example, by spectrophotometric, fluorimetric or by visual means. Reporter enzymes which can be used to detectably label 10 the antibody include, but are not limited to, malate dehydrogenase, staphylococcal nuclease, delta-5-steroid isomerase, yeast alcohol dehydrogenase, alpha-glycerophosphate dehydrogenase, triose phosphate isomerase, horseradish peroxidase, alkaline phosphatase, asparaginase, glucose oxidase, beta-galactosidase, ribonuclease, urease, catalase, glucose-6-phosphate dehydrogenase, glucoamylase and acetylcholinesterase. Additionally, the 15 detection can be accomplished by colorimetric methods which employ a chromogenic substrate for the reporter enzyme. Detection may also be accomplished by visual comparison of the extent of enzymatic reaction of a substrate in comparison with similarly prepared standards.

Albumin fusion proteins may also be radiolabelled and used in any of a variety of 20 other immunoassays. For example, by radioactively labeling the albumin fusion proteins, it is possible to use the albumin fusion proteins in a radioimmunoassay (RIA) (see, for example, Weintraub, B., Principles of Radioimmunoassays, Seventh Training Course on Radioligand Assay Techniques, The Endocrine Society, March, 1986, which is incorporated by reference herein). The radioactive isotope can be detected by means 25 including, but not limited to, a gamma counter, a scintillation counter, or autoradiography.

It is also possible to label the albumin fusion proteins with a fluorescent compound. When the fluorescently labeled antibody is exposed to light of the proper wave length, its presence can then be detected due to fluorescence. Among the most commonly used fluorescent labeling compounds are fluorescein isothiocyanate, 30 rhodamine, phycoerythrin, phycocyanin, allophycocyanin, ophthaldehyde and fluorescamine.

The albumin fusion protein can also be detectably labeled using fluorescence

emitting metals such as  $^{152}\text{Eu}$ , or others of the lanthanide series. These metals can be attached to the antibody using such metal chelating groups as diethylenetriaminepentaacetic acid (DTPA) or ethylenediaminetetraacetic acid (EDTA).

The albumin fusion proteins can also can be detectably labeled by coupling it to a chemiluminescent compound. The presence of the chemiluminescent-tagged albumin fusion protein is then determined by detecting the presence of luminescence that arises during the course of a chemical reaction. Examples of particularly useful chemiluminescent labeling compounds are luminol, isoluminol, theromatic acridinium ester, imidazole, acridinium salt and oxalate ester.

Likewise, a bioluminescent compound may be used to label albumin fusion proteins of the present invention. Bioluminescence is a type of chemiluminescence found in biological systems in, which a catalytic protein increases the efficiency of the chemiluminescent reaction. The presence of a bioluminescent protein is determined by detecting the presence of luminescence. Important bioluminescent compounds for purposes of labeling are luciferin, luciferase and aequorin.

### **Transgenic Organisms**

Transgenic organisms that express the albumin fusion proteins of the invention are also included in the invention. Transgenic organisms are genetically modified organisms into which recombinant, exogenous or cloned genetic material has been transferred. Such genetic material is often referred to as a transgene. The nucleic acid sequence of the transgene may include one or more transcriptional regulatory sequences and other nucleic acid sequences such as introns, that may be necessary for optimal expression and secretion of the encoded protein. The transgene may be designed to direct the expression of the encoded protein in a manner that facilitates its recovery from the organism or from a product produced by the organism, *e.g.* from the milk, blood, urine, eggs, hair or seeds of the organism. The transgene may consist of nucleic acid sequences derived from the genome of the same species or of a different species than the species of the target animal. The transgene may be integrated either at a locus of a genome where that particular nucleic acid sequence is not otherwise normally found or at the normal locus for the transgene.

The term "germ cell line transgenic organism" refers to a transgenic organism in which the genetic alteration or genetic information was introduced into a germ line cell,

thereby conferring the ability of the transgenic organism to transfer the genetic information to offspring. If such offspring in fact possess some or all of that alteration or genetic information, then they too are transgenic organisms. The alteration or genetic information may be foreign to the species of organism to which the recipient belongs, foreign only to the particular individual recipient, or may be genetic information already possessed by the recipient. In the last case, the altered or introduced gene may be expressed differently than the native gene.

A transgenic organism may be a transgenic animal or a transgenic plant. Transgenic animals can be produced by a variety of different methods including transfection, electroporation, microinjection, gene targeting in embryonic stem cells and recombinant viral and retroviral infection (*see, e.g.*, U.S. Patent No. 4,736,866; U.S. Patent No. 5,602,307; Mullins *et al.* (1993) *Hypertension* 22(4):630-633; Brenin *et al.* (1997) *Surg. Oncol.* 6(2):99-110; Tuan (ed.), *Recombinant Gene Expression Protocols*, Methods in Molecular Biology No. 62, Humana Press (1997)). The method of introduction of nucleic acid fragments into recombination competent mammalian cells can be by any method which favors co-transformation of multiple nucleic acid molecules. Detailed procedures for producing transgenic animals are readily available to one skilled in the art, including the disclosures in U.S. Patent No. 5,489,743 and U.S. Patent No. 5,602,307.

A number of recombinant or transgenic mice have been produced, including those which express an activated oncogene sequence (U.S. Patent No. 4,736,866); express simian SV40 T-antigen (U.S. Patent No. 5,728,915); lack the expression of interferon regulatory factor 1 (IRF-1) (U.S. Patent No. 5,731,490); exhibit dopaminergic dysfunction (U.S. Patent No. 5,723,719); express at least one human gene which participates in blood pressure control (U.S. Patent No. 5,731,489); display greater similarity to the conditions existing in naturally occurring Alzheimer's disease (U.S. Patent No. 5,720,936); have a reduced capacity to mediate cellular adhesion (U.S. Patent No. 5,602,307); possess a bovine growth hormone gene (Clutter *et al.* (1996) *Genetics* 143(4):1753-1760); or, are capable of generating a fully human antibody response (McCarthy (1997) *The Lancet* 349(9049):405).

While mice and rats remain the animals of choice for most transgenic experimentation, in some instances it is preferable or even necessary to use alternative

animal species. Transgenic procedures have been successfully utilized in a variety of non-murine animals, including sheep, goats, pigs, dogs, cats, monkeys, chimpanzees, hamsters, rabbits, cows and guinea pigs (see, e.g., Kim *et al.* (1997) *Mol. Reprod. Dev.* 46(4):515-526; Houdebine (1995) *Reprod. Nutr. Dev.* 35(6):609-617; Petters (1994) *Reprod. Fertil. Dev.* 6(5):643-645; Schnieke *et al.* (1997) *Science* 278(5346):2130-2133; and Amoah (1997) *J. Animal Science* 75(2):578-585).

To direct the secretion of the transgene-encoded protein of the invention into the milk of transgenic mammals, it may be put under the control of a promoter that is preferentially activated in mammary epithelial cells. Promoters that control the genes encoding milk proteins are preferred, for example the promoter for casein, beta lactoglobulin, whey acid protein, or lactalbumin (see, e.g., DiTullio (1992) *BioTechnology* 10:74-77; Clark *et al.* (1989) *BioTechnology* 7:487-492; Gorton *et al.* (1987) *BioTechnology* 5:1183-1187; and Soulier *et al.* (1992) *FEBS Letts.* 297:13). The transgenic mammals of choice would produce large volumes of milk and have long lactating periods, for example goats, cows, camels or sheep.

An albumin fusion protein of the invention can also be expressed in a transgenic plant, e.g. a plant in which the DNA transgene is inserted into the nuclear or plastidic genome. Plant transformation procedures used to introduce foreign nucleic acids into plant cells or protoplasts are known in the art (e.g., see Example 19). See, in general, Methods in Enzymology Vol. 153 ("Recombinant DNA Part D") 1987, Wu and Grossman Eds., Academic Press and European Patent Application EP 693554. Methods for generation of genetically engineered plants are further described in US Patent No. 5,283,184, US Patent No. 5,482,852, and European Patent Application EP 693 554, all of which are hereby incorporated by reference.

### **Pharmaceutical or Therapeutic Compositions**

The albumin fusion proteins of the invention or formulations thereof may be administered by any conventional method including parenteral (e.g. subcutaneous or intramuscular) injection or intravenous infusion. The treatment may consist of a single dose or a plurality of doses over a period of time.

While it is possible for an albumin fusion protein of the invention to be administered alone, it is preferable to present it as a pharmaceutical formulation, together

with one or more acceptable carriers. The carrier(s) must be "acceptable" in the sense of being compatible with the albumin fusion protein and not deleterious to the recipients thereof. Typically, the carriers will be water or saline which will be sterile and pyrogen free. Albumin fusion proteins of the invention are particularly well suited to formulation in aqueous carriers such as sterile pyrogen free water, saline or other isotonic solutions because of their extended shelf-life in solution. For instance, pharmaceutical compositions of the invention may be formulated well in advance in aqueous form, for instance, weeks or months or longer time periods before being dispensed.

For example, wherein the Therapeutic protein is hGH, EPO, alpha-IFN or beta-IFN, formulations containing the albumin fusion protein may be prepared taking into account the extended shelf-life of the albumin fusion protein in aqueous formulations. As exhibited in Table 2, most Therapeutic proteins are unstable with short shelf-lives after formulation with an aqueous carrier. As discussed above, the shelf-life of many of these Therapeutic proteins are markedly increased or prolonged after fusion to HA.

Table 2

Protein	Tradename, Manufacturer	Route	Formulation	Storage Conditions of Non-Fusion Protein
Interferon, alpha-2a	Roferon-A, Hoffmann- LaRoche	sc im	sol n (vial or pre-filled syringe)	4-8°C
Interferon, alpha-2b	Intron-A, Schering Plough	iv sc im	sol n; powder + dil.	4-8°C (all preps, before and after dilution)
COMBO Interferon alpha-2b + Ribavirin	Rebetron (Intron-A + Rebetol) Schering Plough	po + sc	Rebetol capsule + Intron-A injection	
Interferon,	Infergen	sc	sol n	4-8°C

Protein	Tradename, Manufacturer	Route	Formulation	Storage Conditions of Non-Fusion Protein
Alphacon-1	Amgen			
Interferon, alpha-n1, Lympho- blastoid	Wellferon, Wellcome	sc im	sol n (with albumin as stablizer )	4-8°C
Interferon, beta-1a	Avonex, Biogen	im	powder + dil. (with albumin)	4-8°C (before and after dilution) (Use within 3-6h of reconstitution)
	Rebif, Ares-Serono (Europe only)	sc	sol n, in pre-filled syringe	
Interferon, beta-1b	Betaseron, Chiron (Europe: Betaferon)	sc	powder + dil. (with albumin)	4-8°C (before and after dilution) (Use within 3h. of reconstitution) Single use vials.
Interferon, Gamma-1b	Actimmune, InterMune Pharmaceuticals	sc		4-8°C (before and after dilution) (Use within 3h of reconstitution).
Growth	Genotropin,		powder/dil	4-8°C

Protein	Tradename, Manufacturer	Route	Formulation	Storage Conditions of Non-Fusion Protein
Hormone (somatropin)	Pharmacia Upjohn		cartridges (single or multi-use); single use MiniQuick injector	(before and after dilution); single use MiniQuick Delivery Device should be refrigerated until use.
	Humatrope, Eli Lilly	sc im	powder + dil. (Vial or pen cartridge)	4-8°C (before and after dilution) (Use vials within 25h, cartridges within 28d, of reconstitution).
	Norditropin, Novo Nordisk Pharmaceuticals			
	Nutropin, Genentech	sc	powder + dil.	4-8°C (stable for 14d after dilution) (all preps, before and after dilution)
	Nutropin AQ, Genentech	sc	solution	4-8°C (Stable for 28 d after 1st use)
	Nutropin Depot, Genentech	sc	microsphere suspension as powder + dil.	4-8°C Single use pkges. Dose 1-2x/month

Protein	Tradename, Manufacturer	Route	Formulation	Storage Conditions of Non-Fusion Protein
				(ProLease micro-encapsulation technol.)
	Saizen, (Serono)	sc im	powder + dil.	Powder should be stored at Rm Temp . After reconstitution store 4-8°C for up to 14d.
	Serostim, Serono			Powder should be stored at Rm Temp . After reconstitution store in 4-8°C for up to 14d.
hGH, with N-term. Met (somatrem)	Protropin, Genentech	sc im	powder + dil.	4-8°C (all preps, before and after dilution)
Erythropoietin (Epoetin alfa)	Epogen, Amgen	iv sc	sol n	4-8°C (use within 21d of first use) (Single & multi-dose vials)
	Procrit, Amgen	iv sc	sol n	4-8°C (use within 21d of first use) (Single & multi-dose



Protein	Tradename, Manufacturer	Route	Formulation	Storage Conditions of Non-Fusion Protein
				vials)

In instances where aerosol administration is appropriate, the albumin fusion proteins of the invention can be formulated as aerosols using standard procedures. The term "aerosol" includes any gas-borne suspended phase of an albumin fusion protein of the instant invention which is capable of being inhaled into the bronchioles or nasal passages. Specifically, aerosol includes a gas-borne suspension of droplets of an albumin fusion protein of the instant invention, as may be produced in a metered dose inhaler or nebulizer, or in a mist sprayer. Aerosol also includes a dry powder composition of a compound of the instant invention suspended in air or other carrier gas, which may be delivered by insufflation from an inhaler device, for example. See Ganderton & Jones, *Drug Delivery to the Respiratory Tract*, Ellis Horwood (19 87); Gonda (1990) *Critical Reviews in Therapeutic Drug Carrier Systems* 6:273-313; and Raeburn *et al.*, (1992) *Pharmacol. Toxicol. Methods* 27:143-159.

The formulations of the invention are also typically non-immunogenic, in part, because of the use of the components of the albumin fusion protein being derived from the proper species. For instance, for human use, both the Therapeutic protein and albumin portions of the albumin fusion protein will typically be human. In some cases, wherein either component is non human-derived, that component may be humanized by substitution of key amino acids so that specific epitopes appear to the human immune system to be human in nature rather than foreign.

The formulations may conveniently be presented in unit dosage form and may be prepared by any of the methods well known in the art of pharmacy. Such methods include the step of bringing into association the albumin fusion protein with the carrier that constitutes one or more accessory ingredients. In general the formulations are prepared by uniformly and intimately bringing into association the active ingredient with liquid carriers or finely divided solid carriers or both, and then, if necessary, shaping the product.

Formulations suitable for parenteral administration include aqueous and non-aqueous sterile injection solutions which may contain anti-oxidants, buffers, bacteriostats and solutes which render the formulation appropriate for the intended recipient; and aqueous and non-aqueous sterile suspensions which may include suspending agents and thickening agents. The formulations may be presented in unit-dose or multi-dose containers, for example sealed ampules, vials or syringes, and may be stored in a freeze-dried (lyophilised) condition requiring only the addition of the sterile liquid carrier, for example water for injections, immediately prior to use. Extemporaneous injection solutions and suspensions may be prepared from sterile powders. Dosage formulations may contain the Therapeutic protein portion at a lower molar concentration or lower dosage compared to the non-fused standard formulation for the Therapeutic protein given the extended serum half-life exhibited by many of the albumin fusion proteins of the invention.

As an example, when an albumin fusion protein of the invention comprises growth hormone as one or more of the Therapeutic protein regions, the dosage form can be calculated on the basis of the potency of the albumin fusion protein relative to the potency of hGH, while taking into account the prolonged serum half-life and shelf-life of the albumin fusion proteins compared to that of native hGH. Growth hormone is typically administered at 0.3 to 30.0 IU/kg/week, for example 0.9 to 12.0 IU/kg/week, given in three or seven divided doses for a year or more. In an albumin fusion protein consisting of full length HA fused to full length GH, an equivalent dose in terms of units would represent a greater weight of agent but the dosage frequency can be reduced, for example to twice a week, once a week or less.

Formulations or compositions of the invention may be packaged together with, or included in a kit with, instructions or a package insert referring to the extended shelf-life of the albumin fusion protein component. For instance, such instructions or package inserts may address recommended storage conditions, such as time, temperature and light, taking into account the extended or prolonged shelf-life of the albumin fusion proteins of the invention. Such instructions or package inserts may also address the particular advantages of the albumin fusion proteins of the inventions, such as the ease of storage for formulations that may require use in the field, outside of controlled hospital, clinic or office conditions. As described above, formulations of the invention may be in aqueous

form and may be stored under less than ideal circumstances without significant loss of therapeutic activity.

Albumin fusion proteins of the invention can also be included in nutraceuticals. For instance, certain albumin fusion proteins of the invention may be administered in natural products, including milk or milk product obtained from a transgenic mammal which expresses albumin fusion protein. Such compositions can also include plant or plant products obtained from a transgenic plant which expresses the albumin fusion protein. The albumin fusion protein can also be provided in powder or tablet form, with or without other known additives, carriers, fillers and diluents. Nutraceuticals are described in Scott Hegenhart, *Food Product Design*, Dec. 1993.

The invention also provides methods of treatment and/or prevention of diseases or disorders (such as, for example, any one or more of the diseases or disorders disclosed herein) by administration to a subject of an effective amount of an albumin fusion protein of the invention or a polynucleotide encoding an albumin fusion protein of the invention ("albumin fusion polynucleotide") in a pharmaceutically acceptable carrier.

The albumin fusion protein and/or polynucleotide will be formulated and dosed in a fashion consistent with good medical practice, taking into account the clinical condition of the individual patient (especially the side effects of treatment with the albumin fusion protein and/or polynucleotide alone), the site of delivery, the method of administration, the scheduling of administration, and other factors known to practitioners. The "effective amount" for purposes herein is thus determined by such considerations.

As a general proposition, the total pharmaceutically effective amount of the albumin fusion protein administered parenterally per dose will be in the range of about 1 ug/kg/day to 10 mg/kg/day of patient body weight, although, as noted above, this will be subject to therapeutic discretion. More preferably, this dose is at least 0.01 mg/kg/day, and most preferably for humans between about 0.01 and 1 mg/kg/day for the hormone. If given continuously, the albumin fusion protein is typically administered at a dose rate of about 1 ug/kg/hour to about 50 ug/kg/hour, either by 1-4 injections per day or by continuous subcutaneous infusions, for example, using a mini-pump. An intravenous bag solution may also be employed. The length of treatment needed to observe changes and the interval following treatment for responses to occur appears to vary depending on the desired effect.

Albumin fusion proteins and/or polynucleotides can be administered orally, rectally, parenterally, intracisternally, intravaginally, intraperitoneally, topically (as by powders, ointments, gels, drops or transdermal patch), buccally, or as an oral or nasal spray. "Pharmaceutically acceptable carrier" refers to a non-toxic solid, semisolid or liquid filler, diluent, encapsulating material or formulation auxiliary of any. The term "parenteral" as used herein refers to modes of administration which include intravenous, intramuscular, intraperitoneal, intrasternal, subcutaneous and intraarticular injection and infusion.

Albumin fusion proteins and/or polynucleotides of the invention are also suitably administered by sustained-release systems. Examples of sustained-release albumin fusion proteins and/or polynucleotides are administered orally, rectally, parenterally, intracisternally, intravaginally, intraperitoneally, topically (as by powders, ointments, gels, drops or transdermal patch), buccally, or as an oral or nasal spray. "Pharmaceutically acceptable carrier" refers to a non-toxic solid, semisolid or liquid filler, diluent, encapsulating material or formulation auxiliary of any type. The term "parenteral" as used herein refers to modes of administration which include intravenous, intramuscular, intraperitoneal, intrasternal, subcutaneous and intraarticular injection and infusion. Additional examples of sustained-release albumin fusion proteins and/or polynucleotides include suitable polymeric materials (such as, for example, semi-permeable polymer matrices in the form of shaped articles, e.g., films, or microcapsules), suitable hydrophobic materials (for example as an emulsion in an acceptable oil) or ion exchange resins, and sparingly soluble derivatives (such as, for example, a sparingly soluble salt).

Sustained-release matrices include polylactides (U.S. Pat. No. 3,773,919, EP 58,481), copolymers of L-glutamic acid and gamma-ethyl-L-glutamate (Sidman et al., Biopolymers 22:547-556 (1983)), poly (2- hydroxyethyl methacrylate) (Langer et al., J. Biomed. Mater. Res. 15:167-277 (1981), and Langer, Chem. Tech. 12:98-105 (1982)), ethylene vinyl acetate (Langer et al., Id.) or poly-D- (-)-3-hydroxybutyric acid (EP 133,988).

Sustained-release albumin fusion proteins and/or polynucleotides also include liposomally entrapped albumin fusion proteins and/or polynucleotides of the invention (see generally, Langer, *Science* 249:1527-1533 (1990); Treat et al., in *Liposomes in the Therapy of Infectious Disease and Cancer*, Lopez-Berestein and Fidler (eds.), Liss, New York, pp. 317 -327 and 353-365 (1989)). Liposomes containing the albumin fusion protein

and/or polynucleotide are prepared by methods known per se: DE 3,218,121; Epstein et al., Proc. Natl. Acad. Sci. (USA) 82:3688-3692 (1985); Hwang et al., Proc. Natl. Acad. Sci.(USA) 77:4030-4034 (1980); EP 52,322; EP 36,676; EP 88,046; EP 143,949; EP 142,641; Japanese Pat. Appl. 83-118008; U.S. Pat. Nos. 4,485,045 and 4,544,545; and EP  
5 102,324. Ordinarily, the liposomes are of the small (about 200-800 Angstroms) unilamellar type in which the lipid content is greater than about 30 mol. percent cholesterol, the selected proportion being adjusted for the optimal Therapeutic.

In yet an additional embodiment, the albumin fusion proteins and/or polynucleotides of the invention are delivered by way of a pump (*see* Langer, *supra*;  
10 Sefton, CRC Crit. Ref. Biomed. Eng. 14:201 (1987); Buchwald et al., Surgery 88:507 (1980); Saudek et al., N. Engl. J. Med. 321:574 (1989)).

Other controlled release systems are discussed in the review by Langer (*Science* 249:1527-1533 (1990)).

For parenteral administration, in one embodiment, the albumin fusion protein  
15 and/or polynucleotide is formulated generally by mixing it at the desired degree of purity, in a unit dosage injectable form (solution, suspension, or emulsion), with a pharmaceutically acceptable carrier, i.e., one that is non-toxic to recipients at the dosages and concentrations employed and is compatible with other ingredients of the formulation. For example, the formulation preferably does not include oxidizing agents and other  
20 compounds that are known to be deleterious to the Therapeutic.

Generally, the formulations are prepared by contacting the albumin fusion protein and/or polynucleotide uniformly and intimately with liquid carriers or finely divided solid carriers or both. Then, if necessary, the product is shaped into the desired formulation. Preferably the carrier is a parenteral carrier, more preferably a solution that is isotonic with  
25 the blood of the recipient. Examples of such carrier vehicles include water, saline, Ringer's solution, and dextrose solution. Non-aqueous vehicles such as fixed oils and ethyl oleate are also useful herein, as well as liposomes.

The carrier suitably contains minor amounts of additives such as substances that enhance isotonicity and chemical stability. Such materials are non-toxic to recipients at  
30 the dosages and concentrations employed, and include buffers such as phosphate, citrate, succinate, acetic acid, and other organic acids or their salts; antioxidants such as ascorbic acid; low molecular weight (less than about ten residues) polypeptides, e.g., polyarginine

or tripeptides; proteins, such as serum albumin, gelatin, or immunoglobulins; hydrophilic polymers such as polyvinylpyrrolidone; amino acids, such as glycine, glutamic acid, aspartic acid, or arginine; monosaccharides, disaccharides, and other carbohydrates including cellulose or its derivatives, glucose, manose, or dextrans; chelating agents such as EDTA; sugar alcohols such as mannitol or sorbitol; counterions such as sodium; and/or nonionic surfactants such as polysorbates, poloxamers, or PEG.

The albumin fusion protein is typically formulated in such vehicles at a concentration of about 0.1 mg/ml to 100 mg/ml, preferably 1-10 mg/ml, at a pH of about 3 to 8. It will be understood that the use of certain of the foregoing excipients, carriers, or stabilizers will result in the formation of polypeptide salts.

Any pharmaceutical used for therapeutic administration can be sterile. Sterility is readily accomplished by filtration through sterile filtration membranes (e.g., 0.2 micron membranes). Albumin fusion proteins and/or polynucleotides generally are placed into a container having a sterile access port, for example, an intravenous solution bag or vial having a stopper pierceable by a hypodermic injection needle.

Albumin fusion proteins and/or polynucleotides ordinarily will be stored in unit or multi-dose containers, for example, sealed ampoules or vials, as an aqueous solution or as a lyophilized formulation for reconstitution. As an example of a lyophilized formulation, 10-ml vials are filled with 5 ml of sterile-filtered 1% (w/v) aqueous albumin fusion protein and/or polynucleotide solution, and the resulting mixture is lyophilized. The infusion solution is prepared by reconstituting the lyophilized albumin fusion protein and/or polynucleotide using bacteriostatic Water-for-Injection.

In a specific and preferred embodiment, the Albumin fusion protein formulations comprises 0.01 M sodium phosphate, 0.15 mM sodium chloride, 0.16 micromole sodium octanoate/milligram of fusion protein, 15 micrograms/milliliter polysorbate 80, pH 7.2. In another specific and preferred embodiment, the Albumin fusion protein formulations consists 0.01 M sodium phosphate, 0.15 mM sodium chloride, 0.16 micromole sodium octanoate/milligram of fusion protein, 15 micrograms/milliliter polysorbate 80, pH 7.2. The pH and buffer are chosen to match physiological conditions and the salt is added as a tonicifier. Sodium octanoate has been chosen due to its reported ability to increase the thermal stability of the protein in solution. Finally, polysorbate has been added as a generic surfactant, which lowers the surface tension of the solution and lowers non-

specific adsorption of the albumin fusion protein to the container closure system.

The invention also provides a pharmaceutical pack or kit comprising one or more containers filled with one or more of the ingredients of the albumin fusion proteins and/or polynucleotides of the invention. Associated with such container(s) can be a notice in the form prescribed by a governmental agency regulating the manufacture, use or sale of pharmaceuticals or biological products, which notice reflects approval by the agency of manufacture, use or sale for human administration. In addition, the albumin fusion proteins and/or polynucleotides may be employed in conjunction with other therapeutic compounds.

The albumin fusion proteins and/or polynucleotides of the invention may be administered alone or in combination with adjuvants. Adjuvants that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, alum, alum plus deoxycholate (ImmunoAg), MTP-PE (Biocine Corp.), QS21 (Genentech, Inc.), BCG (e.g., THERACYS®), MPL and nonviable preparations of *Corynebacterium parvum*. In a specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are administered in combination with alum. In another specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are administered in combination with QS-21. Further adjuvants that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, Monophosphoryl lipid immunomodulator, AdjuVax 100a, QS-21, QS-18, CRL1005, Aluminum salts, MF-59, and Virosomal adjuvant technology. Vaccines that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, vaccines directed toward protection against MMR (measles, mumps, rubella), polio, varicella, tetanus/diphtheria, hepatitis A, hepatitis B, *Haemophilus influenzae* B, whooping cough, pneumonia, influenza, Lyme's Disease, rotavirus, cholera, yellow fever, Japanese encephalitis, poliomyelitis, rabies, typhoid fever, and pertussis. Combinations may be administered either concomitantly, e.g., as an admixture, separately but simultaneously or concurrently; or sequentially. This includes presentations in which the combined agents are administered together as a therapeutic mixture, and also procedures in which the combined agents are administered separately but simultaneously, e.g., as through separate intravenous lines into the same individual. Administration "in combination" further includes the separate administration of one of the

compounds or agents given first, followed by the second.

The albumin fusion proteins and/or polynucleotides of the invention may be administered alone or in combination with other therapeutic agents. Albumin fusion protein and/or polynucleotide agents that may be administered in combination with the  
5 albumin fusion proteins and/or polynucleotides of the invention, include but not limited to, chemotherapeutic agents, antibiotics, steroidal and non-steroidal anti-inflammatories, conventional immunotherapeutic agents, and/or therapeutic treatments described below. Combinations may be administered either concomitantly, e.g., as an admixture, separately but simultaneously or concurrently; or sequentially. This includes presentations in which  
10 the combined agents are administered together as a therapeutic mixture, and also procedures in which the combined agents are administered separately but simultaneously, e.g., as through separate intravenous lines into the same individual. Administration "in combination" further includes the separate administration of one of the compounds or agents given first, followed by the second.

15 In one embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with an anticoagulant. Anticoagulants that may be administered with the compositions of the invention include, but are not limited to, heparin, low molecular weight heparin, warfarin sodium (e.g., COUMADIN®), dicumarol, 4-hydroxycoumarin, anisindione (e.g., MIRADON™), acenocoumarol (e.g.,  
20 nicoumalone, SINTHROME™), indan-1,3-dione, phenprocoumon (e.g., MARCUMAR™), ethyl biscoumacetate (e.g., TROMEXAN™), and aspirin. In a specific embodiment, compositions of the invention are administered in combination with heparin and/or warfarin. In another specific embodiment, compositions of the invention are administered in combination with warfarin. In another specific embodiment, compositions  
25 of the invention are administered in combination with warfarin and aspirin. In another specific embodiment, compositions of the invention are administered in combination with heparin. In another specific embodiment, compositions of the invention are administered in combination with heparin and aspirin.

30 In another embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with thrombolytic drugs. Thrombolytic drugs that may be administered with the compositions of the invention include, but are not limited to, plasminogen, lys-plasminogen, alpha2-antiplasmin, streptokinae (e.g.,



KABIKINASE™), antirespace (e.g., EMINASE™), tissue plasminogen activator (t-PA, altevase, ACTIVASE™), urokinase (e.g., ABBOKINASE™), sauruplase, (Prourokinase, single chain urokinase), and aminocaproic acid (e.g., AMICAR™). In a specific embodiment, compositions of the invention are administered in combination with tissue plasminogen activator and aspirin.

In another embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with antiplatelet drugs. Antiplatelet drugs that may be administered with the compositions of the invention include, but are not limited to, aspirin, dipyridamole (e.g., PERSANTINE™), and ticlopidine (e.g., TICLID™).

In specific embodiments, the use of anti-coagulants, thrombolytic and/or antiplatelet drugs in combination with albumin fusion proteins and/or polynucleotides of the invention is contemplated for the prevention, diagnosis, and/or treatment of thrombosis, arterial thrombosis, venous thrombosis, thromboembolism, pulmonary embolism, atherosclerosis, myocardial infarction, transient ischemic attack, unstable angina. In specific embodiments, the use of anticoagulants, thrombolytic drugs and/or antiplatelet drugs in combination with albumin fusion proteins and/or polynucleotides of the invention is contemplated for the prevention of occlusion of saphenous grafts, for reducing the risk of periprocedural thrombosis as might accompany angioplasty procedures, for reducing the risk of stroke in patients with atrial fibrillation including nonrheumatic atrial fibrillation, for reducing the risk of embolism associated with mechanical heart valves and or mitral valves disease. Other uses for the therapeutics of the invention, alone or in combination with antiplatelet, anticoagulant, and/or thrombolytic drugs, include, but are not limited to, the prevention of occlusions in extracorporeal devices (e.g., intravascular canulas, vascular access shunts in hemodialysis patients, hemodialysis machines, and cardiopulmonary bypass machines).

In certain embodiments, albumin fusion proteins and/or polynucleotides of the invention are administered in combination with antiretroviral agents, nucleoside/nucleotide reverse transcriptase inhibitors (NRTIs), non-nucleoside reverse transcriptase inhibitors (NNRTIs), and/or protease inhibitors (PIs). NRTIs that may be administered in combination with the albumin fusion proteins and/or polynucleotides of the invention, include, but are not limited to, RETROVIR™ (zidovudine/AZT), VIDEX™ (didanosine/ddI), HIVID™ (zalcitabine/ddC), ZERIT™ (stavudine/d4T), EPIVIR™

(lamivudine/3TC), and COMBIVIR™ (zidovudine/lamivudine). NNRTIs that may be administered in combination with the albumin fusion proteins and/or polynucleotides of the invention, include, but are not limited to, VIRAMUNE™ (nevirapine), RESCRIPTOR™ (delavirdine), and SUSTIVA™ (efavirenz). Protease inhibitors that may  
5 be administered in combination with the albumin fusion proteins and/or polynucleotides of the invention, include, but are not limited to, CRIXIVAN™ (indinavir), NORVIR™ (ritonavir), INVIRASE™ (saquinavir), and VIRACEPT™ (nelfinavir). In a specific embodiment, antiretroviral agents, nucleoside reverse transcriptase inhibitors, non-nucleoside reverse transcriptase inhibitors, and/or protease inhibitors may be used in any  
10 combination with albumin fusion proteins and/or polynucleotides of the invention to treat AIDS and/or to prevent or treat HIV infection.

Additional NRTIs include LODENOSINE™ (F-ddA; an acid-stable adenosine NRTI; Triangle/Abbott); COVIRACIL™ (emtricitabine/FTC; structurally related to lamivudine (3TC) but with 3- to 10-fold greater activity *in vitro*; Triangle/Abbott); dOTC  
15 (BCH-10652, also structurally related to lamivudine but retains activity against a substantial proportion of lamivudine-resistant isolates; Biochem Pharma); Adefovir (refused approval for anti-HIV therapy by FDA; Gilead Sciences); PREVEON® (Adefovir Dipivoxil, the active prodrug of adefovir; its active form is PMEA-pp); TENOFOVIR™ (bis-POC PMPA, a PMPA prodrug; Gilead); DAPD/DXG (active metabolite of DAPD;  
20 Triangle/Abbott); D-D4FC (related to 3TC, with activity against AZT/3TC-resistant virus); GW420867X (Glaxo Wellcome); ZIAGEN™ (abacavir/159U89; Glaxo Wellcome Inc.); CS-87 (3'-azido-2',3'-dideoxyuridine; WO 99/66936); and S-acyl-2-thioethyl (SATE)-bearing prodrug forms of  $\beta$ -L-FD4C and  $\beta$ -L-FddC (WO 98/17281).

Additional NNRTIs include COACTINON™ (Emivirine/MKC-442, potent NNRTI  
25 of the HEPT class; Triangle/Abbott); CAPRAVIRINE™ (AG-1549/S-1153, a next generation NNRTI with activity against viruses containing the K103N mutation; Agouron); PNU-142721 (has 20- to 50-fold greater activity than its predecessor delavirdine and is active against K103N mutants; Pharmacia & Upjohn); DPC-961 and DPC-963 (second-generation derivatives of efavirenz, designed to be active against  
30 viruses with the K103N mutation; DuPont); GW-420867X (has 25-fold greater activity than HBY097 and is active against K103N mutants; Glaxo Wellcome); CALANOLIDE A

(naturally occurring agent from the latex tree; active against viruses containing either or both the Y181C and K103N mutations); and Propolis (WO 99/49830).

Additional protease inhibitors include LOPINAVIR™ (ABT378/r; Abbott Laboratories); BMS-232632 (an azapeptide; Bristol-Myers Squibb); TIPRANAVIR™ (PNU-140690, a non-peptic dihydropyrone; Pharmacia & Upjohn); PD-178390 (a nonpeptidic dihydropyrone; Parke-Davis); BMS 232632 (an azapeptide; Bristol-Myers Squibb); L-756,423 (an indinavir analog; Merck); DMP-450 (a cyclic urea compound; Avid & DuPont); AG-1776 (a peptidomimetic with *in vitro* activity against protease inhibitor-resistant viruses; Agouron); VX-175/GW-433908 (phosphate prodrug of amprenavir; Vertex & Glaxo Wellcome); CGP61755 (Ciba); and AGENERASE™ (amprenavir; Glaxo Wellcome Inc.).

Additional antiretroviral agents include fusion inhibitors/gp41 binders. Fusion inhibitors/gp41 binders include T-20 (a peptide from residues 643-678 of the HIV gp41 transmembrane protein ectodomain which binds to gp41 in its resting state and prevents transformation to the fusogenic state; Trimeris) and T-1249 (a second-generation fusion inhibitor; Trimeris).

Additional antiretroviral agents include fusion inhibitors/chemokine receptor antagonists. Fusion inhibitors/chemokine receptor antagonists include CXCR4 antagonists such as AMD 3100 (a bicyclam), SDF-1 and its analogs, and ALX40-4C (a cationic peptide), T22 (an 18 amino acid peptide; Trimeris) and the T22 analogs T134 and T140; CCR5 antagonists such as RANTES (9-68), AOP-RANTES, NNY-RANTES, and TAK-779; and CCR5/CXCR4 antagonists such as NSC 651016 (a distamycin analog). Also included are CCR2B, CCR3, and CCR6 antagonists. Chemokine receptor agonists such as RANTES, SDF-1, MIP-1 $\alpha$ , MIP-1 $\beta$ , etc., may also inhibit fusion.

Additional antiretroviral agents include integrase inhibitors. Integrase inhibitors include dicaffeoylquinic (DFQA) acids; L-chicoric acid (a dicaffeoyltartaric (DCTA) acid); quinalizarin (QLC) and related anthraquinones; ZINTEVIR™ (AR 177, an oligonucleotide that probably acts at cell surface rather than being a true integrase inhibitor; Arondex); and naphthols such as those disclosed in WO 98/50347.

Additional antiretroviral agents include hydroxyurea-like compounds such as BCX-34 (a purine nucleoside phosphorylase inhibitor; Biocryst); ribonucleotide reductase inhibitors such as DIDOX™ (Molecules for Health); inosine monophosphate

dehydrogenase (IMPDH) inhibitors such as VX-497 (Vertex); and mycopholic acids such as CellCept (mycophenolate mofetil; Roche).

Additional antiretroviral agents include inhibitors of viral integrase, inhibitors of viral genome nuclear translocation such as arylene bis(methylketone) compounds; inhibitors of HIV entry such as AOP-RANTES, NNY-RANTES, RANTES-IgG fusion protein, soluble complexes of RANTES and glycosaminoglycans (GAG), and AMD-3100; nucleocapsid zinc finger inhibitors such as dithiane compounds; targets of HIV Tat and Rev; and pharmacoenhancers such as ABT-378.

Other antiretroviral therapies and adjunct therapies include cytokines and lymphokines such as MIP-1 $\alpha$ , MIP-1 $\beta$ , SDF-1 $\alpha$ , IL-2, PROLEUKIN™ (aldesleukin/L2-7001; Chiron), IL-4, IL-10, IL-12, and IL-13; interferons such as IFN- $\alpha$ 2a; antagonists of TNFs, NF $\kappa$ B, GM-CSF, M-CSF, and IL-10; agents that modulate immune activation such as cyclosporin and prednisone; vaccines such as Remune™ (HIV Immunogen), APL 400-003 (Apollon), recombinant gp120 and fragments, bivalent (B/E) recombinant envelope glycoprotein, rgp120CM235, MN rgp120, SF-2 rgp120, gp120/soluble CD4 complex, Delta JR-FL protein, branched synthetic peptide derived from discontinuous gp120 C3/C4 domain, fusion-competent immunogens, and Gag, Pol, Nef, and Tat vaccines; gene-based therapies such as genetic suppressor elements (GSEs; WO 98/54366), and intrakines (genetically modified CC chemokines targetted to the ER to block surface expression of newly synthesized CCR5 (Yang *et al.*, *PNAS* 94:11567-72 (1997); Chen *et al.*, *Nat. Med.* 3:1110-16 (1997)); antibodies such as the anti-CXCR4 antibody 12G5, the anti-CCR5 antibodies 2D7, 5C7, PA8, PA9, PA10, PA11, PA12, and PA14, the anti-CD4 antibodies Q4120 and RPA-T4, the anti-CCR3 antibody 7B11, the anti-gp120 antibodies 17b, 48d, 447-52D, 257-D, 268-D and 50.1, anti-Tat antibodies, anti-TNF- $\alpha$  antibodies, and monoclonal antibody 33A; aryl hydrocarbon (AH) receptor agonists and antagonists such as TCDD, 3,3',4,4',5-pentachlorobiphenyl, 3,3',4,4'-tetrachlorobiphenyl, and  $\alpha$ -naphthoflavone (WO 98/30213); and antioxidants such as  $\gamma$ -L-glutamyl-L-cysteine ethyl ester ( $\gamma$ -GCE; WO 99/56764).

In a further embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with an antiviral agent. Antiviral agents that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, acyclovir, ribavirin, amantadine, and remantidine.

In other embodiments, albumin fusion proteins and/or polynucleotides of the invention may be administered in combination with anti-opportunistic infection agents. Anti-opportunistic agents that may be administered in combination with the albumin fusion proteins and/or polynucleotides of the invention, include, but are not limited to,

5 TRIMETHOPRIM-SULFAMETHOXAZOLE™, DAPSONE™, PENTAMIDINE™, ATOVAQUONE™, ISONIAZID™, RIFAMPIN™, PYRAZINAMIDE™, ETHAMBUTOL™, RIFABUTIN™, CLARITHROMYCIN™, AZITHROMYCIN™, GANCICLOVIR™, FOSCARNET™, CIDOFOVIR™, FLUCONAZOLE™, ITRACONAZOLE™, KETOCONAZOLE™, ACYCLOVIR™, FAMCICOLVIR™,

10 PYRIMETHAMINE™, LEUCOVORIN™, NEUPOGEN™ (filgrastim/G-CSF), and LEUKINE™ (sargramostim/GM-CSF). In a specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are used in any combination with TRIMETHOPRIM-SULFAMETHOXAZOLE™, DAPSONE™, PENTAMIDINE™, and/or ATOVAQUONE™ to prophylactically treat or prevent an opportunistic *Pneumocystis*

15 *carinii* pneumonia infection. In another specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are used in any combination with ISONIAZID™, RIFAMPIN™, PYRAZINAMIDE™, and/or ETHAMBUTOL™ to prophylactically treat or prevent an opportunistic *Mycobacterium avium* complex infection. In another specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are used in

20 any combination with RIFABUTIN™, CLARITHROMYCIN™, and/or AZITHROMYCIN™ to prophylactically treat or prevent an opportunistic *Mycobacterium tuberculosis* infection. In another specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are used in any combination with GANCICLOVIR™, FOSCARNET™, and/or CIDOFOVIR™ to prophylactically treat or prevent an

25 opportunistic cytomegalovirus infection. In another specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are used in any combination with FLUCONAZOLE™, ITRACONAZOLE™, and/or KETOCONAZOLE™ to prophylactically treat or prevent an opportunistic fungal infection. In another specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are used in

30 any combination with ACYCLOVIR™ and/or FAMCICOLVIR™ to prophylactically treat or prevent an opportunistic herpes simplex virus type I and/or type II infection. In another

specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are used in any combination with PYRIMETHAMINE™ and/or LEUCOVORIN™ to prophylactically treat or prevent an opportunistic *Toxoplasma gondii* infection. In another specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are used in any combination with LEUCOVORIN™ and/or NEUPOGEN™ to prophylactically treat or prevent an opportunistic bacterial infection.

In a further embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with an antibiotic agent. Antibiotic agents that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, amoxicillin, beta-lactamases, aminoglycosides, beta-lactam (glycopeptide), beta-lactamases, Clindamycin, chloramphenicol, cephalosporins, ciprofloxacin, erythromycin, fluoroquinolones, macrolides, metronidazole, penicillins, quinolones, rapamycin, rifampin, streptomycin, sulfonamide, tetracyclines, trimethoprim, trimethoprim-sulfamethoxazole, and vancomycin.

In other embodiments, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with immunestimulants. Immunestimulants that may be administered in combination with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, levamisole (e.g., ERGAMISOL™), isoprinosine (e.g. INOSIPLEX™), interferons (e.g. interferon alpha), and interleukins (e.g., IL-2).

In other embodiments, albumin fusion proteins and/or polynucleotides of the invention are administered in combination with immunosuppressive agents. Immunosuppressive agents that may be administered in combination with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, steroids, cyclosporine, cyclosporine analogs, cyclophosphamide methylprednisone, prednisone, azathioprine, FK-506, 15-deoxyspergualin, and other immunosuppressive agents that act by suppressing the function of responding T cells. Other immunosuppressive agents that may be administered in combination with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, prednisolone, methotrexate, thalidomide, methoxsalen, rapamycin, leflunomide, mizoribine (BREDININ™), brequinar, deoxyspergualin, and azaspirane (SKF 105685), ORTHOCLONE OKT® 3 (muromonab-CD3), SANDIMMUNE™, NEORAL™,

SANGDYA™ (cyclosporine), PROGRAF® (FK506, tacrolimus), CELLCEPT® (mycophenolate mofetil, of which the active metabolite is mycophenolic acid), IMURAN™ (azathioprine), glucocorticosteroids, adrenocortical steroids such as DELTASONE™ (prednisone) and HYDELTRASOL™ (prednisolone), FOLEX™ and  
5 MEXATE™ (methotrexate), OXSORALEN-ULTRA™ (methoxsalen) and RAPAMUNE™ (sirolimus). In a specific embodiment, immunosuppressants may be used to prevent rejection of organ or bone marrow transplantation.

In an additional embodiment, albumin fusion proteins and/or polynucleotides of the invention are administered alone or in combination with one or more intravenous  
10 immune globulin preparations. Intravenous immune globulin preparations that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but not limited to, GAMMAR™, IVEEGAM™, SANDOGLOBULIN™, GAMMAGARD S/D™, ATGAM™ (antithymocyte globulin), and GAMIMUNE™. In a specific embodiment, albumin fusion proteins and/or polynucleotides of the invention are  
15 administered in combination with intravenous immune globulin preparations in transplantation therapy (e.g., bone marrow transplant).

In certain embodiments, the albumin fusion proteins and/or polynucleotides of the invention are administered alone or in combination with an anti-inflammatory agent. Anti-inflammatory agents that may be administered with the albumin fusion proteins and/or  
20 polynucleotides of the invention include, but are not limited to, corticosteroids (e.g. betamethasone, budesonide, cortisone, dexamethasone, hydrocortisone, methylprednisolone, prednisolone, prednisone, and triamcinolone), nonsteroidal anti-inflammatory drugs (e.g., diclofenac, diflunisal, etodolac, fenoprofen, floctafenine, flurbiprofen, ibuprofen, indomethacin, ketoprofen, meclofenamate, mefenamic acid,  
25 meloxicam, nabumetone, naproxen, oxaprozin, phenylbutazone, piroxicam, sulindac, tenoxicam, tiaprofenic acid, and tolmetin.), as well as antihistamines, aminoarylcarboxylic acid derivatives, arylacetic acid derivatives, arylbutyric acid derivatives, arylcarboxylic acids, arylpropionic acid derivatives, pyrazoles, pyrazolones, salicylic acid derivatives, thiazinecarboxamides, e-acetamidocaproic acid, S-adenosylmethionine, 3-amino-4-  
30 hydroxybutyric acid, amixetrine, bendazac, benzydamine, bucolome, difenpiramide, ditazol, emorfazone, guaiazulene, nabumetone, nimesulide, orgotein, oxaceprol, paranyline, perisoxal, pifoxime, proquazone, proxazole, and tenidap.

In an additional embodiment, the compositions of the invention are administered alone or in combination with an anti-angiogenic agent. Anti-angiogenic agents that may be administered with the compositions of the invention include, but are not limited to, Angiostatin (Entremed, Rockville, MD), Troponin-1 (Boston Life Sciences, Boston, MA),  
5 anti-Invasive Factor, retinoic acid and derivatives thereof, paclitaxel (Taxol), Suramin, Tissue Inhibitor of Metalloproteinase-1, Tissue Inhibitor of Metalloproteinase-2, VEGF, Plasminogen Activator Inhibitor-1, Plasminogen Activator Inhibitor-2, and various forms of the lighter "d group" transition metals.

Lighter "d group" transition metals include, for example, vanadium, molybdenum,  
10 tungsten, titanium, niobium, and tantalum species. Such transition metal species may form transition metal complexes. Suitable complexes of the above-mentioned transition metal species include oxo transition metal complexes.

Representative examples of vanadium complexes include oxo vanadium complexes such as vanadate and vanadyl complexes. Suitable vanadate complexes  
15 include metavanadate and orthovanadate complexes such as, for example, ammonium metavanadate, sodium metavanadate, and sodium orthovanadate. Suitable vanadyl complexes include, for example, vanadyl acetylacetonate and vanadyl sulfate including vanadyl sulfate hydrates such as vanadyl sulfate mono- and trihydrates.

Representative examples of tungsten and molybdenum complexes also include oxo  
20 complexes. Suitable oxo tungsten complexes include tungstate and tungsten oxide complexes. Suitable tungstate complexes include ammonium tungstate, calcium tungstate, sodium tungstate dihydrate, and tungstic acid. Suitable tungsten oxides include tungsten (IV) oxide and tungsten (VI) oxide. Suitable oxo molybdenum complexes include molybdate, molybdenum oxide, and molybdenyl complexes. Suitable molybdate  
25 complexes include ammonium molybdate and its hydrates, sodium molybdate and its hydrates, and potassium molybdate and its hydrates. Suitable molybdenum oxides include molybdenum (VI) oxide, molybdenum (VI) oxide, and molybdic acid. Suitable molybdenyl complexes include, for example, molybdenyl acetylacetonate. Other suitable tungsten and molybdenum complexes include hydroxo derivatives derived from, for  
30 example, glycerol, tartaric acid, and sugars.

A wide variety of other anti-angiogenic factors may also be utilized within the context of the present invention. Representative examples include, but are not limited to,



platelet factor 4; protamine sulphate; sulphated chitin derivatives (prepared from queen crab shells), (Murata et al., *Cancer Res.* 51:22-26, (1991)); Sulphated Polysaccharide Peptidoglycan Complex (SP- PG) (the function of this compound may be enhanced by the presence of steroids such as estrogen, and tamoxifen citrate); Staurosporine; modulators of matrix metabolism, including for example, proline analogs, cishydroxyproline, d,L-3,4-dehydroproline, Thiaproline, alpha,alpha-dipyridyl, aminopropionitrile fumarate; 4-propyl-5-(4-pyridinyl)-2(3H)-oxazolone; Methotrexate; Mitoxantrone; Heparin; Interferons; 2 Macroglobulin-serum; ChIMP-3 (Pavloff et al., *J. Bio. Chem.* 267:17321-17326, (1992)); Chymostatin (Tomkinson et al., *Biochem J.* 286:475-480, (1992)); Cyclodextrin Tetradecasulfate; Eponemycin; Camptothecin; Fumagillin (Ingber et al., *Nature* 348:555-557, (1990)); Gold Sodium Thiomalate ("GST"; Matsubara and Ziff, *J. Clin. Invest.* 79:1440-1446, (1987)); anticollagenase-serum; alpha2-antiplasmin (Holmes et al., *J. Biol. Chem.* 262(4):1659-1664, (1987)); Bisantrene (National Cancer Institute); Lobenzarit disodium (N-(2)-carboxyphenyl-4- chloroanthronilic acid disodium or "CCA"; (Takeuchi et al., *Agents Actions* 36:312-316, (1992)); and metalloproteinase inhibitors such as BB94.

Additional anti-angiogenic factors that may also be utilized within the context of the present invention include Thalidomide, (Celgene, Warren, NJ); Angiostatic steroid; AGM-1470 (H. Brem and J. Folkman *J Pediatr. Surg.* 28:445-51 (1993)); an integrin alpha v beta 3 antagonist (C. Storgard et al., *J Clin. Invest.* 103:47-54 (1999)); carboxyaminolimidazole; Carboxyamidotriazole (CAI) (National Cancer Institute, Bethesda, MD); Conbretastatin A-4 (CA4P) (OXiGENE, Boston, MA); Squalamine (Magainin Pharmaceuticals, Plymouth Meeting, PA); TNP-470, (Tap Pharmaceuticals, Deerfield, IL); ZD-0101 AstraZeneca (London, UK); APRA (CT2584); Benefin, Byrostatin-1 (SC339555); CGP-41251 (PKC 412); CM101; Dexrazoxane (ICRF187); DMXAA; Endostatin; Flavopridiol; Genestein; GTE; ImmTher; Iressa (ZD1839); Octreotide (Somatostatin); Panretin; Penacillamine; Photopoint; PI-88; Prinomastat (AG-3340) Purlytin; Suradista (FCE26644); Tamoxifen (Nolvadex); Tazarotene; Tetrathiomolybdate; Xeloda (Capecitabine); and 5-Fluorouracil.

Anti-angiogenic agents that may be administered in combination with the compounds of the invention may work through a variety of mechanisms including, but not limited to, inhibiting proteolysis of the extracellular matrix, blocking the function of endothelial cell-extracellular matrix adhesion molecules, by antagonizing the function of

angiogenesis inducers such as growth factors, and inhibiting integrin receptors expressed on proliferating endothelial cells. Examples of anti-angiogenic inhibitors that interfere with extracellular matrix proteolysis and which may be administered in combination with the compositions of the invention include, but are not limited to, AG-3340 (Agouron, La Jolla, CA), BAY-12-9566 (Bayer, West Haven, CT), BMS-275291 (Bristol Myers Squibb, Princeton, NJ), CGS-27032A (Novartis, East Hanover, NJ), Marimastat (British Biotech, Oxford, UK), and Metastat (Aeterna, St-Foy, Quebec). Examples of anti-angiogenic inhibitors that act by blocking the function of endothelial cell-extracellular matrix adhesion molecules and which may be administered in combination with the compositions of the invention include, but are not limited to, EMD-121974 (Merck KgaA Darmstadt, Germany) and Vitaxin (Ixsys, La Jolla, CA/Medimmune, Gaithersburg, MD). Examples of anti-angiogenic agents that act by directly antagonizing or inhibiting angiogenesis inducers and which may be administered in combination with the compositions of the invention include, but are not limited to, Angiozyme (Ribozyme, Boulder, CO), Anti-VEGF antibody (Genentech, S. San Francisco, CA), PTK-787/ZK-225846 (Novartis, Basel, Switzerland), SU-101 (Sugen, S. San Francisco, CA), SU-5416 (Sugen/ Pharmacia Upjohn, Bridgewater, NJ), and SU-6668 (Sugen). Other anti-angiogenic agents act to indirectly inhibit angiogenesis. Examples of indirect inhibitors of angiogenesis which may be administered in combination with the compositions of the invention include, but are not limited to, IM-862 (Cytran, Kirkland, WA), Interferon-alpha, IL-12 (Roche, Nutley, NJ), and Pentosan polysulfate (Georgetown University, Washington, DC).

In particular embodiments, the use of compositions of the invention in combination with anti-angiogenic agents is contemplated for the treatment, prevention, and/or amelioration of an autoimmune disease, such as for example, an autoimmune disease described herein.

In a particular embodiment, the use of compositions of the invention in combination with anti-angiogenic agents is contemplated for the treatment, prevention, and/or amelioration of arthritis. In a more particular embodiment, the use of compositions of the invention in combination with anti-angiogenic agents is contemplated for the treatment, prevention, and/or amelioration of rheumatoid arthritis.

In another embodiment, the polynucleotides encoding a polypeptide of the present invention are administered in combination with an angiogenic protein, or polynucleotides

encoding an angiogenic protein. Examples of angiogenic proteins that may be administered with the compositions of the invention include, but are not limited to, acidic and basic fibroblast growth factors, VEGF-1, VEGF-2, VEGF-3, epidermal growth factor alpha and beta, platelet-derived endothelial cell growth factor, platelet-derived growth factor, tumor necrosis factor alpha, hepatocyte growth factor, insulin-like growth factor, colony stimulating factor, macrophage colony stimulating factor, granulocyte/macrophage colony stimulating factor, and nitric oxide synthase.

In additional embodiments, compositions of the invention are administered in combination with a chemotherapeutic agent. Chemotherapeutic agents that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to alkylating agents such as nitrogen mustards (for example, Mechlorethamine, cyclophosphamide, Cyclophosphamide Ifosfamide, Melphalan (L-sarcosylsin), and Chlorambucil), ethylenimines and methylmelamines (for example, Hexamethylmelamine and Thiotepa), alkyl sulfonates (for example, Busulfan), nitrosoureas (for example, Carmustine (BCNU), Lomustine (CCNU), Semustine (methyl-CCNU), and Streptozocin (streptozotocin)), triazenes (for example, Dacarbazine (DTIC; dimethyltriazenoimidazolecarboxamide)), folic acid analogs (for example, Methotrexate (amethopterin)), pyrimidine analogs (for example, Fluorouracil (5-fluorouracil; 5-FU), Floxuridine (fluorodeoxyuridine; FudR), and Cytarabine (cytosine arabinoside)), purine analogs and related inhibitors (for example, Mercaptopurine (6-mercaptopurine; 6-MP), Thioguanine (6-thioguanine; TG), and Pentostatin (2'-deoxycoformycin)), vinca alkaloids (for example, Vinblastine (VLB, vinblastine sulfate)) and Vincristine (vincristine sulfate)), epipodophyllotoxins (for example, Etoposide and Teniposide), antibiotics (for example, Dactinomycin (actinomycin D), Daunorubicin (daunomycin; rubidomycin), Doxorubicin, Bleomycin, Plicamycin (mithramycin), and Mitomycin (mitomycin C), enzymes (for example, L-Asparaginase), biological response modifiers (for example, Interferon-alpha and interferon-alpha-2b), platinum coordination compounds (for example, Cisplatin (cis-DDP) and Carboplatin), anthracenedione (Mitoxantrone), substituted ureas (for example, Hydroxyurea), methylhydrazine derivatives (for example, Procarbazine (N-methylhydrazine; MIH), adrenocorticosteroids (for example, Prednisone), progestins (for example, Hydroxyprogesterone caproate, Medroxyprogesterone, Medroxyprogesterone acetate, and Megestrol acetate), estrogens (for example, Diethylstilbestrol (DES),

Diethylstilbestrol diphosphate, Estradiol, and Ethinyl estradiol), antiestrogens (for example, Tamoxifen), androgens (Testosterone propionate, and Fluoxymesterone), antiandrogens (for example, Flutamide), gonadotropin-releasing hormone analogs (for example, Leuprolide), other hormones and hormone analogs (for example, methyltestosterone, estramustine, estramustine phosphate sodium, chlorotrianisene, and testolactone), and others (for example, dicarbazine, glutamic acid, and mitotane).

In one embodiment, the compositions of the invention are administered in combination with one or more of the following drugs: infliximab (also known as Remicade™ Centocor, Inc.), Trocade (Roche, RO-32-3555), Leflunomide (also known as Arava™ from Hoechst Marion Roussel), Kineret™ (an IL-1 Receptor antagonist also known as Anakinra from Amgen, Inc.)

In a specific embodiment, compositions of the invention are administered in combination with CHOP (cyclophosphamide, doxorubicin, vincristine, and prednisone) or combination of one or more of the components of CHOP. In one embodiment, the compositions of the invention are administered in combination with anti-CD20 antibodies, human monoclonal anti-CD20 antibodies. In another embodiment, the compositions of the invention are administered in combination with anti-CD20 antibodies and CHOP, or anti-CD20 antibodies and any combination of one or more of the components of CHOP, particularly cyclophosphamide and/or prednisone. In a specific embodiment, compositions of the invention are administered in combination with Rituximab. In a further embodiment, compositions of the invention are administered with Rituximab and CHOP, or Rituximab and any combination of one or more of the components of CHOP, particularly cyclophosphamide and/or prednisone. In a specific embodiment, compositions of the invention are administered in combination with tositumomab. In a further embodiment, compositions of the invention are administered with tositumomab and CHOP, or tositumomab and any combination of one or more of the components of CHOP, particularly cyclophosphamide and/or prednisone. The anti-CD20 antibodies may optionally be associated with radioisotopes, toxins or cytotoxic prodrugs.

In another specific embodiment, the compositions of the invention are administered in combination Zevalin™. In a further embodiment, compositions of the invention are administered with Zevalin™ and CHOP, or Zevalin™ and any combination of one or more of the components of CHOP, particularly cyclophosphamide and/or

prednisone. Zevalin™ may be associated with one or more radisotopes. Particularly preferred isotopes are <sup>90</sup>Y and <sup>111</sup>In.

In an additional embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with cytokines. Cytokines that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, IL2, IL3, IL4, IL5, IL6, IL7, IL10, IL12, IL13, IL15, anti-CD40, CD40L, IFN-gamma and TNF-alpha. In another embodiment, albumin fusion proteins and/or polynucleotides of the invention may be administered with any interleukin, including, but not limited to, IL-1alpha, IL-1beta, IL-2, IL-3, IL-4, IL-5, IL-6, IL-7, IL-8, IL-9, IL-10, IL-11, IL-12, IL-13, IL-14, IL-15, IL-16, IL-17, IL-18, IL-19, IL-20, and IL-21.

In one embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with members of the TNF family. TNF, TNF-related or TNF-like molecules that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, soluble forms of TNF-alpha, lymphotoxin-alpha (LT-alpha, also known as TNF-beta), LT-beta (found in complex heterotrimer LT-alpha2-beta), OPGL, FasL, CD27L, CD30L, CD40L, 4-1BBL, DcR3, OX40L, TNF-gamma (International Publication No. WO 96/14328), AIM-I (International Publication No. WO 97/33899), endokine-alpha (International Publication No. WO 98/07880), OPG, and neutrokin-alpha (International Publication No. WO 98/18921, OX40, and nerve growth factor (NGF), and soluble forms of Fas, CD30, CD27, CD40 and 4-IBB, TR2 (International Publication No. WO 96/34095), DR3 (International Publication No. WO 97/33904), DR4 (International Publication No. WO 98/32856), TR5 (International Publication No. WO 98/30693), TRANK, TR9 (International Publication No. WO 98/56892), TR10 (International Publication No. WO 98/54202), 312C2 (International Publication No. WO 98/06842), and TR12, and soluble forms CD154, CD70, and CD153.

In an additional embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with angiogenic proteins. Angiogenic proteins that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, Glioma Derived Growth Factor (GDGF), as disclosed in European Patent Number EP-399816; Platelet Derived Growth Factor-A

(PDGF-A), as disclosed in European Patent Number EP-682110; Platelet Derived Growth Factor-B (PDGF-B), as disclosed in European Patent Number EP-282317; Placental Growth Factor (PlGF), as disclosed in International Publication Number WO 92/06194; Placental Growth Factor-2 (PlGF-2), as disclosed in Hauser et al., Growth Factors, 4:259-268 (1993); Vascular Endothelial Growth Factor (VEGF), as disclosed in International Publication Number WO 90/13649; Vascular Endothelial Growth Factor-A (VEGF-A), as disclosed in European Patent Number EP-506477; Vascular Endothelial Growth Factor-2 (VEGF-2), as disclosed in International Publication Number WO 96/39515; Vascular Endothelial Growth Factor B (VEGF-3); Vascular Endothelial Growth Factor B-186 (VEGF-B186), as disclosed in International Publication Number WO 96/26736; Vascular Endothelial Growth Factor-D (VEGF-D), as disclosed in International Publication Number WO 98/02543; Vascular Endothelial Growth Factor-D (VEGF-D), as disclosed in International Publication Number WO 98/07832; and Vascular Endothelial Growth Factor-E (VEGF-E), as disclosed in German Patent Number DE19639601. The above mentioned references are herein incorporated by reference in their entireties.

In an additional embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with Fibroblast Growth Factors. Fibroblast Growth Factors that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, FGF-1, FGF-2, FGF-3, FGF-4, FGF-5, FGF-6, FGF-7, FGF-8, FGF-9, FGF-10, FGF-11, FGF-12, FGF-13, FGF-14, and FGF-15.

In an additional embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with hematopoietic growth factors. Hematopoietic growth factors that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, granulocyte macrophage colony stimulating factor (GM-CSF) (sargramostim, LEUKINE™, PROKINE™), granulocyte colony stimulating factor (G-CSF) (filgrastim, NEUPOGEN™), macrophage colony stimulating factor (M-CSF, CSF-1) erythropoietin (epoetin alfa, EPOGEN™, PROCRIT™), stem cell factor (SCF, c-kit ligand, steel factor), megakaryocyte colony stimulating factor, PIXY321 (a GMCSF/IL-3 fusion protein), interleukins, especially any one or more of IL-1 through IL-12, interferon-gamma, or thrombopoietin.

In certain embodiments, albumin fusion proteins and/or polynucleotides of the present invention are administered in combination with adrenergic blockers, such as, for example, acebutolol, atenolol, betaxolol, bisoprolol, carteolol, labetalol, metoprolol, nadolol, oxprenolol, penbutolol, pindolol, propranolol, sotalol, and timolol.

5 In another embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with an antiarrhythmic drug (e.g., adenosine, amiodarone, bretylium, digitalis, digoxin, digitoxin, diltiazem, disopyramide, esmolol, flecainide, lidocaine, mexiletine, moricizine, phenytoin, procainamide, N-acetyl procainamide, propafenone, propranolol, quinidine, sotalol, tocainide, and verapamil).

10 In another embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with diuretic agents, such as carbonic anhydrase-inhibiting agents (e.g., acetazolamide, dichlorophenamide, and methazolamide), osmotic diuretics (e.g., glycerin, isosorbide, mannitol, and urea), diuretics that inhibit  $\text{Na}^+\text{-K}^+\text{-2Cl}^-$  symport (e.g., furosemide, bumetanide, azosemide, piretanide, triparamide, 15 ethacrynic acid, muzolimine, and torsemide), thiazide and thiazide-like diuretics (e.g., bendroflumethiazide, benzthiazide, chlorothiazide, hydrochlorothiazide, hydroflumethiazide, methyclothiazide, polythiazide, trichormethiazide, chlorthalidone, indapamide, metolazone, and quinethazone), potassium sparing diuretics (e.g., amiloride and triamterene), and mineralcorticoid receptor antagonists (e.g., spironolactone, 20 canrenone, and potassium canrenoate).

In one embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with treatments for endocrine and/or hormone imbalance disorders. Treatments for endocrine and/or hormone imbalance disorders include, but are not limited to,  $^{127}\text{I}$ , radioactive isotopes of iodine such as  $^{131}\text{I}$  and  $^{123}\text{I}$ ; 25 recombinant growth hormone, such as HUMATROPE™ (recombinant somatotropin); growth hormone analogs such as PROTROPIN™ (somatrem); dopamine agonists such as PARLODEL™ (bromocriptine); somatostatin analogs such as SANDOSTATIN™ (octreotide); gonadotropin preparations such as PREGNYL™, A.P.L.™ and PROFASI™ (chorionic gonadotropin (CG)), PERGONAL™ (menotropins), and METRODIN™ 30 (urofollitropin (uFSH)); synthetic human gonadotropin releasing hormone preparations such as FACTREL™ and LUTREPULSE™ (gonadorelin hydrochloride); synthetic gonadotropin agonists such as LUPRON™ (leuprolide acetate), SUPPRELIN™ (histrelin

acetate), SYNAREL™ (nafarelin acetate), and ZOLADEX™ (goserelin acetate); synthetic preparations of thyrotropin-releasing hormone such as RELEFACT TRH™ and THYPINONE™ (protirelin); recombinant human TSH such as THYROGEN™; synthetic preparations of the sodium salts of the natural isomers of thyroid hormones such as L-T<sub>4</sub>™, 5 SYNTHROID™ and LEVOTHROID™ (levothyroxine sodium), L-T<sub>3</sub>™, CYTOMEL™ and TRIOSTAT™ (liothyroine sodium), and THYROLAR™ (liotrix); antithyroid compounds such as 6-*n*-propylthiouracil (propylthiouracil), 1-methyl-2-mercaptoimidazole and TAPAZOLE™ (methimazole), NEO-MERCAZOLE™ (carbimazole); beta-adrenergic receptor antagonists such as propranolol and esmolol; Ca<sup>2+</sup> channel blockers; 10 dexamethasone and iodinated radiological contrast agents such as TELEPAQUE™ (iopanoic acid) and ORAGRAFIN™ (sodium ipodate).

Additional treatments for endocrine and/or hormone imbalance disorders include, but are not limited to, estrogens or conjugated estrogens such as ESTRACE™ (estradiol), ESTINYL™ (ethinyl estradiol), PREMARIN™, ESTRATAB™, ORTHO-EST™, OGEN™ 15 and estropipate (estrone), ESTROVIS™ (quinestrol), ESTRADERM™ (estradiol), DELESTROGEN™ and VALERGEN™ (estradiol valerate), DEPO-ESTRADIOL CYPIONATE™ and ESTROJECT LA™ (estradiol cypionate); antiestrogens such as NOLVADEX™ (tamoxifen), SEROPHENE™ and CLOMID™ (clomiphene); progestins such as DURALUTIN™ (hydroxyprogesterone caproate), MPA™ and DEPO- 20 PROVERA™ (medroxyprogesterone acetate), PROVERA™ and CYCRIN™ (MPA), MEGACE™ (megestrol acetate), NORLUTIN™ (norethindrone), and NORLUTATE™ and AYGESTIN™ (norethindrone acetate); progesterone implants such as NORPLANT SYSTEM™ (subdermal implants of norgestrel); antiprogestins such as RU 486™ (mifepristone); hormonal contraceptives such as ENOVID™ (norethynodrel plus 25 mestranol), PROGESTASERT™ (intrauterine device that releases progesterone), LOESTRIN™, BREVICON™, MODICON™, GENORA™, NELONA™, NORINYL™, OVACON-35™ and OVACON-50™ (ethinyl estradiol/norethindrone), LEVLEN™, NORDETTE™, TRI-LEVLEN™ and TRIPHASIL-21™ (ethinyl estradiol/levonorgestrel) LO/OVRAL™ and OVRAL™ (ethinyl estradiol/norgestrel), DEMULEN™ (ethinyl 30 estradiol/ethynodiol diacetate), NORINYL™, ORTHO-NOVUM™, NORETHIN™, GENORA™, and NELOVA™ (norethindrone/mestranol), DESOGEN™ and ORTHO-



CEPT™ (ethinyl estradiol/desogestrel), ORTHO-CYCLEN™ and ORTHO-TRICYCLEN™ (ethinyl estradiol/norgestimate), MICRONOR™ and NOR-QD™ (norethindrone), and OVRETTE™ (norgestrel).

Additional treatments for endocrine and/or hormone imbalance disorders include, but are not limited to, testosterone esters such as methenolone acetate and testosterone undecanoate; parenteral and oral androgens such as TESTOJECT-50™ (testosterone), TESTEX™ (testosterone propionate), DELATESTRYL™ (testosterone enanthate), DEPO-TESTOSTERONE™ (testosterone cypionate), DANOCRINE™ (danazol), HALOTESTIN™ (fluoxymesterone), ORETON METHYL™, TESTRED™ and VIRILON™ (methyltestosterone), and OXANDRIN™ (oxandrolone); testosterone transdermal systems such as TESTODERM™; androgen receptor antagonist and 5-alpha-reductase inhibitors such as ANDROCUR™ (cyproterone acetate), EULEXIN™ (flutamide), and PROSCAR™ (finasteride); adrenocorticotrophic hormone preparations such as CORTROSYN™ (cosyntropin); adrenocortical steroids and their synthetic analogs such as ACLOVATE™ (alclometasone dipropionate), CYCLOCORT™ (amcinonide), BECLOVENT™ and VANCERIL™ (beclomethasone dipropionate), CELESTONE™ (betamethasone), BENISONE™ and UTICORT™ (betamethasone benzoate), DIPROSONE™ (betamethasone dipropionate), CELESTONE PHOSPHATE™ (betamethasone sodium phosphate), CELESTONE SOLUSPAN™ (betamethasone sodium phosphate and acetate), BETA-VAL™ and VALISONE™ (betamethasone valerate), TEMOVATE™ (clobetasol propionate), CLODERM™ (clocortolone pivalate), CORTEF™ and HYDROCORTONE™ (cortisol (hydrocortisone)), HYDROCORTONE ACETATE™ (cortisol (hydrocortisone) acetate), LOCOID™ (cortisol (hydrocortisone) butyrate), HYDROCORTONE PHOSPHATE™ (cortisol (hydrocortisone) sodium phosphate), A-HYDROCORT™ and SOLU CORTEF™ (cortisol (hydrocortisone) sodium succinate), WESTCORT™ (cortisol (hydrocortisone) valerate), CORTISONE ACETATE™ (cortisone acetate), DESOWEN™ and TRIDESILON™ (desonide), TOPICORT™ (desoximetasone), DECADRON™ (dexamethasone), DECADRON LA™ (dexamethasone acetate), DECADRON PHOSPHATE™ and HEXADROL PHOSPHATE™ (dexamethasone sodium phosphate), FLORONE™ and MAXIFLOR™ (diflorasone diacetate), FLORINEF ACETATE™ (fludrocortisone acetate), AEROBID™ and

NASALIDE™ (flunisolide), FLUONID™ and SYNALAR™ (fluocinolone acetonide), LIDEX™ (fluocinonide), FLUOR-OP™ and FML™ (fluorometholone), CORDRAN™ (flurandrenolide), HALOG™ (halcinonide), HMS LIZUIFILM™ (medrysone), MEDROL™ (methylprednisolone), DEPO-MEDROL™ and MEDROL ACETATE™  
 5 (methylprednisone acetate), A-METHAPRED™ and SOLUMEDROL™ (methylprednisolone sodium succinate), ELOCON™ (mometasone furoate), HALDRONE™ (paramethasone acetate), DELTA-CORTEF™ (prednisolone), ECONOPRED™ (prednisolone acetate), HYDELTRASOL™ (prednisolone sodium phosphate), HYDELTRA-T.B.A™ (prednisolone tebutate), DELTASONE™ (prednisone),  
 10 ARISTOCORT™ and KENACORT™ (triamcinolone), KENALOG™ (triamcinolone acetonide), ARISTOCORT™ and KENACORT DIACETATE™ (triamcinolone diacetate), and ARISTOSPAN™ (triamcinolone hexacetonide); inhibitors of biosynthesis and action of adrenocortical steroids such as CYTADREN™ (aminoglutethimide), NIZORAL™ (ketoconazole), MODRASTANE™ (trilostane), and METOPIRONE™ (metyrapone);  
 15 bovine, porcine or human insulin or mixtures thereof; insulin analogs; recombinant human insulin such as HUMULIN™ and NOVOLIN™; oral hypoglycemic agents such as ORAMIDE™ and ORINASE™ (tolbutamide), DIABINESE™ (chlorpropamide), TOLAMIDE™ and TOLINASE™ (tolazamide), DYMELOR™ (acetoexamide), glibenclamide, MICRONASE™, DIBETA™ and GLYNASE™ (glyburide),  
 20 GLUCOTROL™ (glipizide), and DIAMICRON™ (gliclazide), GLUCOPHAGE™ (metformin), ciglitazone, pioglitazone, and alpha-glucosidase inhibitors; bovine or porcine glucagon; somatostatins such as SANDOSTATIN™ (octreotide); and diazoxides such as PROGLYCEM™ (diazoxide).

In one embodiment, the albumin fusion proteins and/or polynucleotides of the  
 25 invention are administered in combination with treatments for uterine motility disorders. Treatments for uterine motility disorders include, but are not limited to, estrogen drugs such as conjugated estrogens (e.g., PREMARIN® and ESTRATAB®), estradiols (e.g., CLIMARA® and ALORA®), estropipate, and chlorotrianisene; progestin drugs (e.g., AMEN® (medroxyprogesterone), MICRONOR® (norethidrone acetate),  
 30 PROMETRIUM® progesterone, and megestrol acetate); and estrogen/progesterone combination therapies such as, for example, conjugated estrogens/medroxyprogesterone

(e.g., PREMPRO™ and PREMPHASE®) and norethindrone acetate/ethinyl estsradiol (e.g., FEMHRT™).

In an additional embodiment, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with drugs effective in treating iron deficiency and hypochromic anemias, including but not limited to, ferrous sulfate (iron sulfate, FEOSOL™), ferrous fumarate (e.g., FEOSTAT™), ferrous gluconate (e.g., FERGON™), polysaccharide-iron complex (e.g., NIFEREX™), iron dextran injection (e.g., INFED™), cupric sulfate, pyroxidine, riboflavin, Vitamin B<sub>12</sub>, cyanocobalamin injection (e.g., REDISOL™, RUBRAMIN PCT™), hydroxocobalamin, folic acid (e.g., FOLVITE™), leucovorin (folinic acid, 5-CHOH4PteGlu, citrovorum factor) or WELLCOVORIN (Calcium salt of leucovorin), transferrin or ferritin.

In certain embodiments, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with agents used to treat psychiatric disorders. Psychiatric drugs that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, antipsychotic agents (e.g., chlorpromazine, chlorprothixene, clozapine, fluphenazine, haloperidol, loxapine, mesoridazine, molindone, olanzapine, perphenazine, pimozide, quetiapine, risperidone, thioridazine, thiothixene, trifluoperazine, and triflupromazine), antimanic agents (e.g., carbamazepine, divalproex sodium, lithium carbonate, and lithium citrate), antidepressants (e.g., amitriptyline, amoxapine, bupropion, citalopram, clomipramine, desipramine, doxepin, fluvoxamine, fluoxetine, imipramine, isocarboxazid, maprotiline, mirtazapine, nefazodone, nortriptyline, paroxetine, phenelzine, protriptyline, sertraline, tranylcypromine, trazodone, trimipramine, and venlafaxine), antianxiety agents (e.g., alprazolam, buspirone, chlordiazepoxide, clorazepate, diazepam, halazepam, lorazepam, oxazepam, and prazepam), and stimulants (e.g., d-amphetamine, methylphenidate, and pemoline).

In other embodiments, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with agents used to treat neurological disorders. Neurological agents that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, antiepileptic agents (e.g., carbamazepine, clonazepam, ethosuximide, phenobarbital, phenytoin, primidone, valproic acid, divalproex sodium, felbamate, gabapentin, lamotrigine, levetiracetam,

oxcarbazepine, tiagabine, topiramate, zonisamide, diazepam, lorazepam, and clonazepam), antiparkinsonian agents (e.g., levodopa/carbidopa, selegiline, amantidine, bromocriptine, pergolide, ropinirole, pramipexole, benztropine; biperiden; ethopropazine; procyclidine; trihexyphenidyl, tolcapone), and ALS therapeutics (e.g. riluzole).

5 In another embodiment, albumin fusion proteins and/or polynucleotides of the invention are administered in combination with vasodilating agents and/or calcium channel blocking agents. Vasodilating agents that may be administered with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to, Angiotensin Converting Enzyme (ACE) inhibitors (e.g., papaverine, isoxsuprine, 10 benazepril, captopril, cilazapril, enalapril, enalaprilat, fosinopril, lisinopril, moexipril, perindopril, quinapril, ramipril, spirapril, trandolapril, and nylidrin), and nitrates (e.g., isosorbide dinitrate, isosorbide mononitrate, and nitroglycerin). Examples of calcium channel blocking agents that may be administered in combination with the albumin fusion proteins and/or polynucleotides of the invention include, but are not limited to amlodipine, 15 bepridil, diltiazem, felodipine, flunarizine, isradipine, nicardipine, nifedipine, nimodipine, and verapamil.

In certain embodiments, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with treatments for gastrointestinal disorders. Treatments for gastrointestinal disorders that may be administered with the albumin fusion 20 protein and/or polynucleotide of the invention include, but are not limited to, H<sub>2</sub> histamine receptor antagonists (e.g., TAGAMET<sup>TM</sup> (cimetidine), ZANTAC<sup>TM</sup> (ranitidine), PEPCID<sup>TM</sup> (famotidine), and AXID<sup>TM</sup> (nizatidine)); inhibitors of H<sup>+</sup>, K<sup>+</sup> ATPase (e.g., PREVACID<sup>TM</sup> (lansoprazole) and PRILOSEC<sup>TM</sup> (omeprazole)); Bismuth compounds (e.g., PEPTO-BISMOL<sup>TM</sup> (bismuth subsalicylate) and DE-NOL<sup>TM</sup> (bismuth subcitrate)); 25 various antacids; sucralfate; prostaglandin analogs (e.g. CYTOTEK<sup>TM</sup> (misoprostol)); muscarinic cholinergic antagonists; laxatives (e.g., surfactant laxatives, stimulant laxatives, saline and osmotic laxatives); antidiarrheal agents (e.g., LOMOTIL<sup>TM</sup> (diphenoxylate), MOTOFEN<sup>TM</sup> (diphenoxin), and IMODIUM<sup>TM</sup> (loperamide hydrochloride)), synthetic analogs of somatostatin such as SANDOSTATIN<sup>TM</sup> 30 (octreotide), antiemetic agents (e.g., ZOFTRAN<sup>TM</sup> (ondansetron), KYTRIL<sup>TM</sup> (granisetron hydrochloride), tropisetron, dolasetron, metoclopramide, chlorpromazine, perphenazine, prochlorperazine, promethazine, thiethylperazine, triflupromazine, domperidone,

haloperidol, droperidol, trimethobenzamide, dexamethasone, methylprednisolone, dronabinol, and nabilone); D2 antagonists (e.g., metoclopramide, trimethobenzamide and chlorpromazine); bile salts; chenodeoxycholic acid; ursodeoxycholic acid; and pancreatic enzyme preparations such as pancreatin and pancrelipase.

5 In additional embodiments, the albumin fusion proteins and/or polynucleotides of the invention are administered in combination with other therapeutic or prophylactic regimens, such as, for example, radiation therapy.

The invention also provides a pharmaceutical pack or kit comprising one or more containers filled with one or more of the ingredients of the pharmaceutical compositions  
10 comprising albumin fusion proteins of the invention. Optionally associated with such container(s) can be a notice in the form prescribed by a governmental agency regulating the manufacture, use or sale of pharmaceuticals or biological products, which notice reflects approval by the agency of manufacture, use or sale for human administration.

15

### Gene Therapy

Constructs encoding albumin fusion proteins of the invention can be used as a part of a gene therapy protocol to deliver therapeutically effective doses of the albumin fusion protein. A preferred approach for *in vivo* introduction of nucleic acid into a cell is by use  
20 of a viral vector containing nucleic acid, encoding an albumin fusion protein of the invention. Infection of cells with a viral vector has the advantage that a large proportion of the targeted cells can receive the nucleic acid. Additionally, molecules encoded within the viral vector, e.g., by a cDNA contained in the viral vector, are expressed efficiently in cells which have taken up viral vector nucleic acid.

25 Retrovirus vectors and adeno-associated virus vectors can be used as a recombinant gene delivery system for the transfer of exogenous nucleic acid molecules encoding albumin fusion proteins *in vivo*. These vectors provide efficient delivery of nucleic acids into cells, and the transferred nucleic acids are stably integrated into the chromosomal DNA of the host. The development of specialized cell lines (termed  
30 "packaging cells") which produce only replication-defective retroviruses has increased the utility of retroviruses for gene therapy, and defective retroviruses are characterized for use in gene transfer for gene therapy purposes (for a review see Miller, A.D. (1990) *Blood*

76:27 1). A replication defective retrovirus can be packaged into virions which can be used to infect a target cell through the use of a helper virus by standard techniques. Protocols for producing recombinant retroviruses and for infecting cells *in vitro* or *in vivo* with such viruses can be found in Current Protocols in Molecular Biology, Ausubel, F.M. 5 *et al.*, (eds.) Greene Publishing Associates, (1989), Sections 9.10-9.14 and other standard laboratory manuals.

Another viral gene delivery system useful in the present invention uses adenovirus-derived vectors. The genome of an adenovirus can be manipulated such that it encodes and expresses a gene product of interest but is inactivated in terms of its ability to 10 replicate in a normal lytic viral life cycle. See, for example, Berkner *et al.*, *BioTechniques* 6:616 (1988); Rosenfeld *et al.*, *Science* 252:431-434 (1991); and Rosenfeld *et al.*, *Cell* 68:143-155 (1992). Suitable adenoviral vectors derived from the adenovirus strain Ad type 5 d1324 or other strains of adenovirus (*e.g.*, Ad2, Ad3, Ad7 *etc.*) are known to those skilled in the art. Recombinant adenoviruses can be advantageous in certain 15 circumstances in that they are not capable of infecting nondividing cells and can be used to infect a wide variety of cell types, including epithelial cells (Rosenfeld *et al.*, (1992) cited *supra*). Furthermore, the virus particle is relatively stable and amenable to purification and concentration, and as above, can be modified so as to affect the spectrum of infectivity. Additionally, introduced adenoviral DNA (and foreign DNA contained therein) is not 20 integrated into the genome of a host cell but remains episomal, thereby avoiding potential problems that can occur as a result of insertional mutagenesis in situations where introduced DNA becomes integrated into the host genome (*e.g.*, retroviral DNA). Moreover, the carrying capacity of the adenoviral genome for foreign DNA is large (up to 8 kilobases) relative to other gene delivery vectors (Berkner *et al.*, cited *supra*; 25 Haj-Ahmand *et al.*, *J. Virol.* 57:267 (1986)).

In another embodiment, non-viral gene delivery systems of the present invention rely on endocytic pathways for the uptake of the subject nucleotide molecule by the targeted cell. Exemplary gene delivery systems of this type include liposomal derived systems, poly-lysine conjugates, and artificial viral envelopes. In a representative 30 embodiment, a nucleic acid molecule encoding an albumin fusion protein of the invention can be entrapped in liposomes bearing positive charges on their surface (*e.g.*, lipofectins) and (optionally) which are tagged with antibodies against cell surface antigens of the target

tissue (Mizuno *et al.* (1992) *No Shinkei Geka* 20:547-551; PCT publication W091/06309; Japanese patent application 1047381; and European patent publication EP-A-43075).

Gene delivery systems for a gene encoding an albumin fusion protein of the invention can be introduced into a patient by any of a number of methods. For instance, a pharmaceutical preparation of the gene delivery system can be introduced systemically, *e.g.* by intravenous injection, and specific transduction of the protein in the target cells occurs predominantly from specificity of transfection provided by the gene delivery vehicle, cell-type or tissue-type expression due to the transcriptional regulatory sequences controlling expression of the receptor gene, or a combination thereof. In other embodiments, initial delivery of the recombinant gene is more limited with introduction into the animal being quite localized. For example, the gene delivery vehicle can be introduced by catheter (see U.S. Patent 5,328,470) or by Stereotactic injection (*e.g.* Chen *et al.* (1994) *PNAS* 91: 3054-3057). The pharmaceutical preparation of the gene therapy construct can consist essentially of the gene delivery system in an acceptable diluent, or can comprise a slow release matrix in which the gene delivery vehicle is imbedded. Where the albumin fusion protein can be produced intact from recombinant cells, *e.g.* retroviral vectors, the pharmaceutical preparation can comprise one or more cells which produce the albumin fusion protein.

#### 20 *Additional Gene Therapy Methods*

Also encompassed by the invention are gene therapy methods for treating or preventing disorders, diseases and conditions. The gene therapy methods relate to the introduction of nucleic acid (DNA, RNA and antisense DNA or RNA) sequences into an animal to achieve expression of an albumin fusion protein of the invention. This method requires a polynucleotide which codes for an albumin fusion protein of the present invention operatively linked to a promoter and any other genetic elements necessary for the expression of the fusion protein by the target tissue. Such gene therapy and delivery techniques are known in the art, see, for example, WO90/11092, which is herein incorporated by reference.

Thus, for example, cells from a patient may be engineered with a polynucleotide (DNA or RNA) comprising a promoter operably linked to a polynucleotide encoding an albumin fusion protein of the present invention *ex vivo*, with the engineered cells then

being provided to a patient to be treated with the fusion protein of the present invention. Such methods are well-known in the art. For example, see Beldegrun, A., et al., J. Natl. Cancer Inst. 85: 207-216 (1993); Ferrantini, M. et al., Cancer Research 53: 1107-1112 (1993); Ferrantini, M. et al., J. Immunology 153: 4604-4615 (1994); Kaido, T., et al., Int. J. Cancer 60: 221-229 (1995); Ogura, H., et al., Cancer Research 50: 5102-5106 (1990); Santodonato, L., et al., Human Gene Therapy 7:1-10 (1996); Santodonato, L., et al., Gene Therapy 4:1246-1255 (1997); and Zhang, J.-F. et al., Cancer Gene Therapy 3: 31-38 (1996)), which are herein incorporated by reference. In one embodiment, the cells which are engineered are arterial cells. The arterial cells may be reintroduced into the patient through direct injection to the artery, the tissues surrounding the artery, or through catheter injection.

As discussed in more detail below, the polynucleotide constructs can be delivered by any method that delivers injectable materials to the cells of an animal, such as, injection into the interstitial space of tissues (heart, muscle, skin, lung, liver, and the like). The polynucleotide constructs may be delivered in a pharmaceutically acceptable liquid or aqueous carrier.

In one embodiment, polynucleotides encoding the albumin fusion proteins of the present invention is delivered as a naked polynucleotide. The term "naked" polynucleotide, DNA or RNA refers to sequences that are free from any delivery vehicle that acts to assist, promote or facilitate entry into the cell, including viral sequences, viral particles, liposome formulations, lipofectin or precipitating agents and the like. However, polynucleotides encoding the albumin fusion proteins of the present invention can also be delivered in liposome formulations and lipofectin formulations and the like can be prepared by methods well known to those skilled in the art. Such methods are described, for example, in U.S. Patent Nos. 5,593,972, 5,589,466, and 5,580,859, which are herein incorporated by reference.

The polynucleotide vector constructs used in the gene therapy method are preferably constructs that will not integrate into the host genome nor will they contain sequences that allow for replication. Appropriate vectors include pWLNEO, pSV2CAT, pOG44, pXT1 and pSG available from Stratagene; pSVK3, pBPV, pMSG and pSVL available from Pharmacia; and pEF1/V5, pcDNA3.1, and pRc/CMV2 available from Invitrogen. Other suitable vectors will be readily apparent to the skilled artisan.



Any strong promoter known to those skilled in the art can be used for driving the expression of the polynucleotide sequence. Suitable promoters include adenoviral promoters, such as the adenoviral major late promoter; or heterologous promoters, such as the cytomegalovirus (CMV) promoter; the respiratory syncytial virus (RSV) promoter; 5 inducible promoters, such as the MMT promoter, the metallothionein promoter; heat shock promoters; the albumin promoter; the ApoAI promoter; human globin promoters; viral thymidine kinase promoters, such as the Herpes Simplex thymidine kinase promoter; retroviral LTRs; the b-actin promoter; and human growth hormone promoters. The promoter also may be the native promoter for the gene corresponding to the Therapeutic 10 protein portion of the albumin fusion proteins of the invention.

Unlike other gene therapy techniques, one major advantage of introducing naked nucleic acid sequences into target cells is the transitory nature of the polynucleotide synthesis in the cells. Studies have shown that non-replicating DNA sequences can be introduced into cells to provide production of the desired polypeptide for periods of up to 15 six months.

The polynucleotide construct can be delivered to the interstitial space of tissues within the an animal, including of muscle, skin, brain, lung, liver, spleen, bone marrow, thymus, heart, lymph, blood, bone, cartilage, pancreas, kidney, gall bladder, stomach, intestine, testis, ovary, uterus, rectum, nervous system, eye, gland, and connective tissue. 20 Interstitial space of the tissues comprises the intercellular, fluid, mucopolysaccharide matrix among the reticular fibers of organ tissues, elastic fibers in the walls of vessels or chambers, collagen fibers of fibrous tissues, or that same matrix within connective tissue ensheathing muscle cells or in the lacunae of bone. It is similarly the space occupied by the plasma of the circulation and the lymph fluid of the lymphatic channels. Delivery to the 25 interstitial space of muscle tissue is preferred for the reasons discussed below. They may be conveniently delivered by injection into the tissues comprising these cells. They are preferably delivered to and expressed in persistent, non-dividing cells which are differentiated, although delivery and expression may be achieved in non-differentiated or less completely differentiated cells, such as, for example, stem cells of blood or skin 30 fibroblasts. *In vivo* muscle cells are particularly competent in their ability to take up and express polynucleotides.

For the naked nucleic acid sequence injection, an effective dosage amount of DNA

or RNA will be in the range of from about 0.05 mg/kg body weight to about 50 mg/kg body weight. Preferably the dosage will be from about 0.005 mg/kg to about 20 mg/kg and more preferably from about 0.05 mg/kg to about 5 mg/kg. Of course, as the artisan of ordinary skill will appreciate, this dosage will vary according to the tissue site of injection.

5 The appropriate and effective dosage of nucleic acid sequence can readily be determined by those of ordinary skill in the art and may depend on the condition being treated and the route of administration.

The preferred route of administration is by the parenteral route of injection into the interstitial space of tissues. However, other parenteral routes may also be used, such as,  
10 inhalation of an aerosol formulation particularly for delivery to lungs or bronchial tissues, throat or mucous membranes of the nose. In addition, naked DNA constructs can be delivered to arteries during angioplasty by the catheter used in the procedure.

The naked polynucleotides are delivered by any method known in the art, including, but not limited to, direct needle injection at the delivery site, intravenous  
15 injection, topical administration, catheter infusion, and so-called "gene guns". These delivery methods are known in the art.

The constructs may also be delivered with delivery vehicles such as viral sequences, viral particles, liposome formulations, lipofectin, precipitating agents, etc. Such methods of delivery are known in the art.

20 In certain embodiments, the polynucleotide constructs are complexed in a liposome preparation. Liposomal preparations for use in the instant invention include cationic (positively charged), anionic (negatively charged) and neutral preparations. However, cationic liposomes are particularly preferred because a tight charge complex can be formed between the cationic liposome and the polyanionic nucleic acid. Cationic liposomes have  
25 been shown to mediate intracellular delivery of plasmid DNA (Felgner et al., Proc. Natl. Acad. Sci. USA (1987) 84:7413-7416, which is herein incorporated by reference); mRNA (Malone et al., Proc. Natl. Acad. Sci. USA (1989) 86:6077-6081, which is herein incorporated by reference); and purified transcription factors (Debs et al., J. Biol. Chem. (1990) 265:10189-10192, which is herein incorporated by reference), in functional form.

30 Cationic liposomes are readily available. For example, N[1-2,3-dioleoyloxy)propyl]-N,N,N-triethylammonium (DOTMA) liposomes are particularly useful and are available under the trademark Lipofectin, from GIBCO BRL,

Grand Island, N.Y. (See, also, Felgner et al., Proc. Natl Acad. Sci. USA (1987) 84:7413-7416, which is herein incorporated by reference). Other commercially available liposomes include transfectace (DDAB/DOPE) and DOTAP/DOPE (Boehringer).

Other cationic liposomes can be prepared from readily available materials using techniques well known in the art. See, e.g. PCT Publication No. WO 90/11092 (which is herein incorporated by reference) for a description of the synthesis of DOTAP (1,2-bis(oleoyloxy)-3-(trimethylammonio)propane) liposomes. Preparation of DOTMA liposomes is explained in the literature, see, e.g., P. Felgner et al., Proc. Natl. Acad. Sci. USA 84:7413-7417, which is herein incorporated by reference. Similar methods can be used to prepare liposomes from other cationic lipid materials.

Similarly, anionic and neutral liposomes are readily available, such as from Avanti Polar Lipids (Birmingham, Ala.), or can be easily prepared using readily available materials. Such materials include phosphatidyl choline, cholesterol, phosphatidyl ethanolamine, dioleoylphosphatidyl choline (DOPC), dioleoylphosphatidyl glycerol (DOPG), dioleoylphosphatidyl ethanolamine (DOPE), among others. These materials can also be mixed with the DOTMA and DOTAP starting materials in appropriate ratios. Methods for making liposomes using these materials are well known in the art.

For example, commercially dioleoylphosphatidyl choline (DOPC), dioleoylphosphatidyl glycerol (DOPG), and dioleoylphosphatidyl ethanolamine (DOPE) can be used in various combinations to make conventional liposomes, with or without the addition of cholesterol. Thus, for example, DOPG/DOPC vesicles can be prepared by drying 50 mg each of DOPG and DOPC under a stream of nitrogen gas into a sonication vial. The sample is placed under a vacuum pump overnight and is hydrated the following day with deionized water. The sample is then sonicated for 2 hours in a capped vial, using a Heat Systems model 350 sonicator equipped with an inverted cup (bath type) probe at the maximum setting while the bath is circulated at 15EC. Alternatively, negatively charged vesicles can be prepared without sonication to produce multilamellar vesicles or by extrusion through nucleopore membranes to produce unilamellar vesicles of discrete size. Other methods are known and available to those of skill in the art.

The liposomes can comprise multilamellar vesicles (MLVs), small unilamellar vesicles (SUVs), or large unilamellar vesicles (LUVs), with SUVs being preferred. The various liposome-nucleic acid complexes are prepared using methods well known in the

art. See, e.g., Straubinger et al., *Methods of Immunology* (1983), 101:512-527, which is herein incorporated by reference. For example, MLVs containing nucleic acid can be prepared by depositing a thin film of phospholipid on the walls of a glass tube and subsequently hydrating with a solution of the material to be encapsulated. SUVs are prepared by extended sonication of MLVs to produce a homogeneous population of unilamellar liposomes. The material to be entrapped is added to a suspension of preformed MLVs and then sonicated. When using liposomes containing cationic lipids, the dried lipid film is resuspended in an appropriate solution such as sterile water or an isotonic buffer solution such as 10 mM Tris/NaCl, sonicated, and then the preformed liposomes are mixed directly with the DNA. The liposome and DNA form a very stable complex due to binding of the positively charged liposomes to the cationic DNA. SUVs find use with small nucleic acid fragments. LUVs are prepared by a number of methods, well known in the art. Commonly used methods include  $\text{Ca}^{2+}$ -EDTA chelation (Papahadjopoulos et al., *Biochim. Biophys. Acta* (1975) 394:483; Wilson et al., *Cell* 17:77 (1979)); ether injection (Deamer, D. and Bangham, A., *Biochim. Biophys. Acta* 443:629 (1976); Ostro et al., *Biochem. Biophys. Res. Commun.* 76:836 (1977); Fraley et al., *Proc. Natl. Acad. Sci. USA* 76:3348 (1979)); detergent dialysis (Enoch, H. and Strittmatter, P., *Proc. Natl. Acad. Sci. USA* 76:145 (1979)); and reverse-phase evaporation (REV) (Fraley et al., *J. Biol. Chem.* 255:10431 (1980); Szoka, F. and Papahadjopoulos, D., *Proc. Natl. Acad. Sci. USA* 75:145 (1978); Schaefer-Ridder et al., *Science* 215:166 (1982)), which are herein incorporated by reference.

Generally, the ratio of DNA to liposomes will be from about 10:1 to about 1:10. Preferably, the ration will be from about 5:1 to about 1:5. More preferably, the ration will be about 3:1 to about 1:3. Still more preferably, the ratio will be about 1:1.

U.S. Patent No. 5,676,954 (which is herein incorporated by reference) reports on the injection of genetic material, complexed with cationic liposomes carriers, into mice. U.S. Patent Nos. 4,897,355, 4,946,787, 5,049,386, 5,459,127, 5,589,466, 5,693,622, 5,580,859, 5,703,055, and international publication no. WO 94/9469 (which are herein incorporated by reference) provide cationic lipids for use in transfecting DNA into cells and mammals. U.S. Patent Nos. 5,589,466, 5,693,622, 5,580,859, 5,703,055, and international publication no. WO 94/9469 provide methods for delivering DNA-cationic lipid complexes to mammals.

In certain embodiments, cells are engineered, *ex vivo* or *in vivo*, using a retroviral particle containing RNA which comprises a sequence encoding an albumin fusion protein of the present invention. Retroviruses from which the retroviral plasmid vectors may be derived include, but are not limited to, Moloney Murine Leukemia Virus, spleen necrosis virus, Rous sarcoma Virus, Harvey Sarcoma Virus, avian leukosis virus, gibbon ape leukemia virus, human immunodeficiency virus, Myeloproliferative Sarcoma Virus, and mammary tumor virus.

The retroviral plasmid vector is employed to transduce packaging cell lines to form producer cell lines. Examples of packaging cells which may be transfected include, but are not limited to, the PE501, PA317, R-2, R-AM, PA12, T19-14X, VT-19-17-H2, RCRE, RCRIP, GP+E-86, GP+envAm12, and DAN cell lines as described in Miller, Human Gene Therapy 1:5-14 (1990), which is incorporated herein by reference in its entirety. The vector may transduce the packaging cells through any means known in the art. Such means include, but are not limited to, electroporation, the use of liposomes, and CaPO<sub>4</sub> precipitation. In one alternative, the retroviral plasmid vector may be encapsulated into a liposome, or coupled to a lipid, and then administered to a host.

The producer cell line generates infectious retroviral vector particles which include polynucleotide encoding an albumin fusion protein of the present invention. Such retroviral vector particles then may be employed, to transduce eukaryotic cells, either *in vitro* or *in vivo*. The transduced eukaryotic cells will express a fusion protein of the present invention.

In certain other embodiments, cells are engineered, *ex vivo* or *in vivo*, with polynucleotide contained in an adenovirus vector. Adenovirus can be manipulated such that it encodes and expresses fusion protein of the present invention, and at the same time is inactivated in terms of its ability to replicate in a normal lytic viral life cycle. Adenovirus expression is achieved without integration of the viral DNA into the host cell chromosome, thereby alleviating concerns about insertional mutagenesis. Furthermore, adenoviruses have been used as live enteric vaccines for many years with an excellent safety profile (Schwartz et al. Am. Rev. Respir. Dis. 109:233-238 (1974)). Finally, adenovirus mediated gene transfer has been demonstrated in a number of instances including transfer of alpha-1-antitrypsin and CFTR to the lungs of cotton rats (Rosenfeld, M. A. et al. (1991) Science 252:431-434; Rosenfeld et al., (1992) Cell 68:143-155).

Furthermore, extensive studies to attempt to establish adenovirus as a causative agent in human cancer were uniformly negative (Green, M. et al. (1979) Proc. Natl. Acad. Sci. USA 76:6606).

Suitable adenoviral vectors useful in the present invention are described, for example, in Kozarsky and Wilson, Curr. Opin. Genet. Devel. 3:499-503 (1993); Rosenfeld et al., Cell 68:143-155 (1992); Engelhardt et al., Human Genet. Ther. 4:759-769 (1993); Yang et al., Nature Genet. 7:362-369 (1994); Wilson et al., Nature 365:691-692 (1993); and U.S. Patent No. 5,652,224, which are herein incorporated by reference. For example, the adenovirus vector Ad2 is useful and can be grown in human 293 cells. These cells contain the E1 region of adenovirus and constitutively express E1a and E1b, which complement the defective adenoviruses by providing the products of the genes deleted from the vector. In addition to Ad2, other varieties of adenovirus (e.g., Ad3, Ad5, and Ad7) are also useful in the present invention.

Preferably, the adenoviruses used in the present invention are replication deficient. Replication deficient adenoviruses require the aid of a helper virus and/or packaging cell line to form infectious particles. The resulting virus is capable of infecting cells and can express a polynucleotide of interest which is operably linked to a promoter, but cannot replicate in most cells. Replication deficient adenoviruses may be deleted in one or more of all or a portion of the following genes: E1a, E1b, E3, E4, E2a, or L1 through L5.

In certain other embodiments, the cells are engineered, *ex vivo* or *in vivo*, using an adeno-associated virus (AAV). AAVs are naturally occurring defective viruses that require helper viruses to produce infectious particles (Muzyczka, N., Curr. Topics in Microbiol. Immunol. 158:97 (1992)). It is also one of the few viruses that may integrate its DNA into non-dividing cells. Vectors containing as little as 300 base pairs of AAV can be packaged and can integrate, but space for exogenous DNA is limited to about 4.5 kb. Methods for producing and using such AAVs are known in the art. See, for example, U.S. Patent Nos. 5,139,941, 5,173,414, 5,354,678, 5,436,146, 5,474,935, 5,478,745, and 5,589,377.

For example, an appropriate AAV vector for use in the present invention will include all the sequences necessary for DNA replication, encapsidation, and host-cell integration. The polynucleotide construct is inserted into the AAV vector using standard cloning methods, such as those found in Sambrook et al., Molecular Cloning: A

Laboratory Manual, Cold Spring Harbor Press (1989). The recombinant AAV vector is then transfected into packaging cells which are infected with a helper virus, using any standard technique, including lipofection, electroporation, calcium phosphate precipitation, etc. Appropriate helper viruses include adenoviruses, cytomegaloviruses, vaccinia viruses, or herpes viruses. Once the packaging cells are transfected and infected, they will produce infectious AAV viral particles which contain the polynucleotide construct. These viral particles are then used to transduce eukaryotic cells, either *ex vivo* or *in vivo*. The transduced cells will contain the polynucleotide construct integrated into its genome, and will express a fusion protein of the invention.

Another method of gene therapy involves operably associating heterologous control regions and endogenous polynucleotide sequences (e.g. encoding a polypeptide of the present invention) via homologous recombination (see, e.g., U.S. Patent No. 5,641,670, issued June 24, 1997; International Publication No. WO 96/29411, published September 26, 1996; International Publication No. WO 94/12650, published August 4, 1994; Koller et al., Proc. Natl. Acad. Sci. USA 86:8932-8935 (1989); and Zijlstra et al., Nature 342:435-438 (1989), which are herein incorporated by reference. This method involves the activation of a gene which is present in the target cells, but which is not normally expressed in the cells, or is expressed at a lower level than desired.

Polynucleotide constructs are made, using standard techniques known in the art, which contain the promoter with targeting sequences flanking the promoter. Suitable promoters are described herein. The targeting sequence is sufficiently complementary to an endogenous sequence to permit homologous recombination of the promoter-targeting sequence with the endogenous sequence. The targeting sequence will be sufficiently near the 5' end of the desired endogenous polynucleotide sequence so the promoter will be operably linked to the endogenous sequence upon homologous recombination.

The promoter and the targeting sequences can be amplified using PCR. Preferably, the amplified promoter contains distinct restriction enzyme sites on the 5' and 3' ends. Preferably, the 3' end of the first targeting sequence contains the same restriction enzyme site as the 5' end of the amplified promoter and the 5' end of the second targeting sequence contains the same restriction site as the 3' end of the amplified promoter. The amplified promoter and targeting sequences are digested and ligated together.

The promoter-targeting sequence construct is delivered to the cells, either as naked

polynucleotide, or in conjunction with transfection-facilitating agents, such as liposomes, viral sequences, viral particles, whole viruses, lipofection, precipitating agents, etc., described in more detail above. The P promoter-targeting sequence can be delivered by any method, included direct needle injection, intravenous injection, topical administration, catheter infusion, particle accelerators, etc. The methods are described in more detail below.

The promoter-targeting sequence construct is taken up by cells. Homologous recombination between the construct and the endogenous sequence takes place, such that an endogenous sequence is placed under the control of the promoter. The promoter then drives the expression of the endogenous sequence.

The polynucleotide encoding an albumin fusion protein of the present invention may contain a secretory signal sequence that facilitates secretion of the protein. Typically, the signal sequence is positioned in the coding region of the polynucleotide to be expressed towards or at the 5' end of the coding region. The signal sequence may be homologous or heterologous to the polynucleotide of interest and may be homologous or heterologous to the cells to be transfected. Additionally, the signal sequence may be chemically synthesized using methods known in the art.

Any mode of administration of any of the above-described polynucleotides constructs can be used so long as the mode results in the expression of one or more molecules in an amount sufficient to provide a therapeutic effect. This includes direct needle injection, systemic injection, catheter infusion, biolistic injectors, particle accelerators (i.e., "gene guns"), gelfoam sponge depots, other commercially available depot materials, osmotic pumps (e.g., Alza minipumps), oral or suppositorial solid (tablet or pill) pharmaceutical formulations, and decanting or topical applications during surgery. For example, direct injection of naked calcium phosphate-precipitated plasmid into rat liver and rat spleen or a protein-coated plasmid into the portal vein has resulted in gene expression of the foreign gene in the rat livers (Kaneda et al., Science 243:375 (1989)).

A preferred method of local administration is by direct injection. Preferably, an albumin fusion protein of the present invention complexed with a delivery vehicle is administered by direct injection into or locally within the area of arteries. Administration of a composition locally within the area of arteries refers to injecting the composition centimeters and preferably, millimeters within arteries.



Another method of local administration is to contact a polynucleotide construct of the present invention in or around a surgical wound. For example, a patient can undergo surgery and the polynucleotide construct can be coated on the surface of tissue inside the wound or the construct can be injected into areas of tissue inside the wound.

5       Therapeutic compositions useful in systemic administration, include fusion proteins of the present invention complexed to a targeted delivery vehicle of the present invention. Suitable delivery vehicles for use with systemic administration comprise liposomes comprising ligands for targeting the vehicle to a particular site. In specific embodiments, suitable delivery vehicles for use with systemic administration comprise  
10       liposomes comprising albumin fusion proteins of the invention for targeting the vehicle to a particular site.

Preferred methods of systemic administration, include intravenous injection, aerosol, oral and percutaneous (topical) delivery. Intravenous injections can be performed using methods standard in the art. Aerosol delivery can also be performed using methods  
15       standard in the art (see, for example, Stribling et al., Proc. Natl. Acad. Sci. USA 189:11277-11281, 1992, which is incorporated herein by reference). Oral delivery can be performed by complexing a polynucleotide construct of the present invention to a carrier capable of withstanding degradation by digestive enzymes in the gut of an animal. Examples of such carriers, include plastic capsules or tablets, such as those known in the  
20       art. Topical delivery can be performed by mixing a polynucleotide construct of the present invention with a lipophilic reagent (e.g., DMSO) that is capable of passing into the skin.

Determining an effective amount of substance to be delivered can depend upon a number of factors including, for example, the chemical structure and biological activity of the substance, the age and weight of the animal, the precise condition requiring treatment  
25       and its severity, and the route of administration. The frequency of treatments depends upon a number of factors, such as the amount of polynucleotide constructs administered per dose, as well as the health and history of the subject. The precise amount, number of doses, and timing of doses will be determined by the attending physician or veterinarian.

Albumin fusion proteins of the present invention can be administered to any  
30       animal, preferably to mammals and birds. Preferred mammals include humans, dogs, cats, mice, rats, rabbits sheep, cattle, horses and pigs, with humans being particularly preferred.

**Biological Activities**

Albumin fusion proteins and/or polynucleotides encoding albumin fusion proteins of the present invention, can be used in assays to test for one or more biological activities.

- 5 If an albumin fusion protein and/or polynucleotide exhibits an activity in a particular assay, it is likely that the Therapeutic protein corresponding to the fusion protein may be involved in the diseases associated with the biological activity. Thus, the fusion protein could be used to treat the associated disease.

- 10 Members of the secreted family of proteins are believed to be involved in biological activities associated with, for example, cellular signaling. Accordingly, albumin fusion proteins of the invention and polynucleotides encoding these proteins, may be used in diagnosis, prognosis, prevention and/or treatment of diseases and/or disorders associated with aberrant activity of secreted polypeptides.

- 15 In preferred embodiments, fusion proteins of the present invention may be used in the diagnosis, prognosis, prevention and/or treatment of diseases and/or disorders relating to diseases and disorders of the endocrine system, the nervous system (See, for example, "Neurological Disorders" section below), and the immune system (See, for example, "Immune Activity" section below), respiratory system (See, for example, "Respiratory Disorders" section below), cardiovascular system (See, for example, "Cardiovascular Disorders" section below), reproductive system (See, for example, "Reproductive System Disorders" section below), digestive system (See, for example, "Gastrointestinal Disorders" section below), diseases and/or disorders relating to cell proliferation (See, for example, "Hyperproliferative Disorders" section below), and/or diseases or disorders relating to the blood ((See, for example, "Blood-Related Disorders" section below).

- 25 In preferred embodiments, the present invention encompasses a method of treating a disease or disorder listed in the "Preferred Indication Y" column of Table 1 comprising administering to a patient in which such treatment, prevention or amelioration is desired an albumin fusion protein of the invention that comprises a Therapeutic protein portion corresponding to a Therapeutic protein disclosed in the "Therapeutic Protein X" column of Table 1 (in the same row as the disease or disorder to be treated is listed in the "Preferred Indication Y" column of Table 1) in an amount effective to treat, prevent or ameliorate the disease or disorder.

In certain embodiments, a Therapeutic protein having a "Cancer" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to a Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., leukemia, cancer, and/or as described below under "Hyperproliferative Disorders").

In additional embodiments, a Therapeutic protein having a "Cancer" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a neoplasm located in a tissue selected from the group consisting of: colon, abdomen, bone, breast, digestive system, liver, pancreas, prostate, peritoneum, lung, blood (e.g., leukemia), endocrine glands (adrenal, parathyroid, pituitary, testicles, ovary, thymus, thyroid), uterus, eye, head and neck, nervous (central and peripheral), lymphatic system, pelvic, skin, soft tissue, spleen, thoracic, and urogenital.

In other embodiments, a Therapeutic protein having a "Cancer" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a pre-neoplastic condition, selected from the group consisting of: hyperplasia (e.g., endometrial hyperplasia and/or as described in the section entitled "Hyperproliferative Disorders"), metaplasia (e.g., connective tissue metaplasia, atypical metaplasia, and/or as described in the section entitled "Hyperproliferative Disorders"), and dysplasia (e.g., cervical dysplasia, and bronchopulmonary dysplasia).

In additional embodiments, a Therapeutic protein having a "Cancer" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a benign dysproliferative disorder selected from the group consisting of: benign tumors, fibrocystic conditions, tissue hypertrophy, and/or as described in the section entitled "Hyperproliferative Disorders".

In certain embodiments, a Therapeutic protein having a "Immune/Hematopoietic" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and

fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders"), a blood disorder (e.g., as described below under "Immune Activity", "Cardiovascular Disorders" and/or "Blood-Related Disorders"), and/or an infection (e.g., as described  
5 below under "Infectious Disease").

In additional embodiments, a Therapeutic protein having a "Immune/Hematopoietic" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this  
10 Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: anemia, pancytopenia, leukopenia, thrombocytopenia, leukemias, Hodgkin's disease, non-Hodgkin's lymphoma, acute lymphocytic anemia (ALL), plasmacytomas, multiple myeloma, Burkitt's lymphoma, arthritis, asthma, AIDS, autoimmune disease, rheumatoid arthritis, granulomatous disease, immune deficiency, inflammatory bowel disease, sepsis, neutropenia, neutrophilia,  
15 psoriasis, an immune reaction to a transplanted organ and/or tissue, systemic lupus erythematosus, hemophilia, hypercoagulation, diabetes mellitus, endocarditis, meningitis, Lyme Disease, and allergies.

In other embodiments, a Therapeutic protein having a "Reproductive" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a  
20 Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders"), and/or a disorder of the reproductive system (e.g., as described below under "Reproductive System Disorders").

25 In additional embodiments, a Therapeutic protein having a "Reproductive" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: cryptorchism, prostatitis, inguinal hernia, varicocele, a leydig  
30 cell tumor, verrucous carcinoma, prostatitis, malacoplakia, Peyronie's disease, penile carcinoma, squamous cell hyperplasia, dysmenorrhea, ovarian adenocarcinoma, Turner's syndrome, mucopurulent cervicitis, a Sertoli-leydig tumor, ovarian cancer, uterine cancer,

pelvic inflammatory disease, testicular cancer, prostate cancer, Klinefelter's syndrome, Young's syndrome, premature ejaculation, diabetes mellitus, cystic fibrosis, Kartagener's syndrome, testicular atrophy, testicular feminization, anorchia, ectopic testis, epididymitis, orchitis, gonorrhea, syphilis, testicular torsion, vasitis nodosa, a germ cell tumor, a stromal tumor, dysmenorrhea, retroverted uterus, endometriosis, fibroids, adenomyosis, anovulatory bleeding, amenorrhea, Cushing's syndrome, a hydatidiform mole, Asherman's syndrome, premature menopause, precocious puberty, uterine polyps, dysfunctional uterine bleeding, cervicitis, chronic cervicitis, mucopurulent cervicitis, cervical dysplasia, cervical polyps, Nabothian cysts, cervical erosion, cervical incompetence, a cervical neoplasm, pseudohermaphroditism, and premenstrual syndrome.

In other embodiments, a Therapeutic protein having a "Musculoskeletal" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders"), and/or a disorder of the immune system (e.g., as described below under "Immune Activity").

In further embodiments, a Therapeutic protein having a "Musculoskeletal" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: bone cancer (e.g., osteochondroma, benign chondroma, chondroblastoma, chondromyxoid fibroma, osteoid osteoma, giant cell tumor, multiple myeloma, and osteosarcoma), Paget's Disease, rheumatoid arthritis, systemic lupus erythematosus, osteomyelitis, Lyme Disease, gout, bursitis, tendonitis, osteoporosis, osteoarthritis, muscular dystrophy, mitochondrial myopathy, cachexia, and multiple sclerosis.

In other embodiments, a Therapeutic protein having a "Cardiovascular" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders"), and/or a disorder of the cardiovascular system (e.g., as described below under "Cardiovascular Disorders").

In additional embodiments, a Therapeutic protein having a "Cardiovascular" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: myxoma, fibroma, rhabdomyoma, cardiovascular abnormality (e.g., a congenital heart defect, cerebral arteriovenous malformation, septal defect), heart disease (e.g., heart failure, congestive heart disease, arrhythmia, tachycardia, fibrillation, pericardial Disease, endocarditis), cardiac arrest, heart valve disease (e.g., stenosis, regurgitation, prolapse), vascular disease (e.g., hypertension, coronary artery disease, angina, aneurysm, arteriosclerosis, peripheral vascular disease), hyponatremia, hypernatremia, hypokalemia, and hyperkalemia.

In other embodiments, a Therapeutic protein having a "Mixed Fetal" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders").

In further embodiments, a Therapeutic protein having a "Mixed Fetal" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: spina bifida, hydranencephaly, neurofibromatosis, fetal alcohol syndrome, diabetes mellitus, PKU, Down's syndrome, Patau syndrome, Edwards syndrome, Turner syndrome, Apert syndrome, Carpenter syndrome, Conradi syndrome, Crouzon syndrome, cutis laxa, Cornelia de Lange syndrome, Ellis-van Creveld syndrome, Holt-Oram syndrome, Kartagener syndrome, Meckel-Gruber syndrome, Noonan syndrome, Pallister-Hall syndrome, Rubinstein-Taybi syndrome, Scimitar syndrome, Smith-Lemli-Opitz syndrome, thrombocytopenia-absent radius (TAR) syndrome, Treacher Collins syndrome, Williams syndrome, Hirschsprung's disease, Meckel's diverticulum, polycystic kidney disease, Turner's syndrome, and gonadal dysgenesis, Klippel-Feil syndrome, Osteogenesis imperfecta, muscular dystrophy, Tay-Sachs disease, Wilm's tumor, neuroblastoma, and retinoblastoma.

In further embodiments, a Therapeutic protein having a "Excretory" recitation in

the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders") and/or a renal disorder (e.g., as described below under "Renal Disorders").

In other embodiments, a Therapeutic protein having a "Excretory" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: bladder cancer, prostate cancer, benign prostatic hyperplasia, bladder disorders (e.g., urinary incontinence, urinary retention, urinary obstruction, urinary tract infections, interstitial cystitis, prostatitis, neurogenic bladder, hematuria), a renal disorder (e.g., hydronephrosis, proteinuria, renal failure, pyelonephritis, urolithiasis, reflux nephropathy, and unilateral obstructive uropathy).

In further embodiments, a Therapeutic protein having a "Neural/Sensory" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders") and/or a disease or disorder of the nervous system (e.g., as described below under "Neural Activity and Neurological Diseases").

In other embodiments, a Therapeutic protein having a "Neural/Sensory" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: brain cancer (e.g., brain stem glioma, brain tumor, central nervous system (Primary) lymphoma, central nervous system lymphoma, cerebellar astrocytoma, and cerebral astrocytoma, a neurodegenerative disorder (e.g., Alzheimer's Disease, Creutzfeldt-Jakob Disease, Parkinson's Disease, and Idiopathic Presenile Dementia), encephalomyelitis, cerebral malaria, meningitis, a metabolic brain disease (e.g., phenylketonuria and pyruvate carboxylase deficiency), cerebellar ataxia, ataxia telangiectasia, and AIDS Dementia Complex, schizophrenia, attention deficit disorder,

hyperactive attention deficit disorder, autism, and an obsessive compulsive disorder.

In other embodiments, a Therapeutic protein having a "Respiratory" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders") and/or a disease or disorder of the respiratory system (e.g., as described below under "Respiratory Disorders").

In other embodiments, a Therapeutic protein having a "Respiratory" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: a cancer of the respiratory system (such as larynx cancer, pharynx cancer, trachea cancer, epiglottis cancer, lung cancer, squamous cell carcinoma, small cell (oat cell) carcinoma, large cell carcinoma, and adenocarcinoma), an allergic reaction, cystic fibrosis, sarcoidosis, histiocytosis X, an infiltrative lung disease (e.g., pulmonary fibrosis and lymphoid interstitial pneumonia), an obstructive airway disease (e.g., asthma, emphysema, chronic or acute bronchitis), an occupational lung disease (e.g., silicosis and asbestosis), pneumonia, and pleurisy.

In other embodiments, a Therapeutic protein having an "Endocrine" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders"), a disease or disorder of the respiratory system (e.g., as described below under "Respiratory Disorders"), a renal disorder (e.g., as described below under "Renal Disorders"), and/or a disorder of the endocrine system (e.g., as described below under "Endocrine Disorders").

In other embodiments, a Therapeutic protein having a "Endocrine" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: a cancer of endocrine tissues and/or organs (e.g., cancer of the



- hypothalamus, pituitary gland, thyroid gland, parathyroid glands, pancreas, adrenal glands, ovaries, and testes), diabetes (e.g., diabetes insipidus, type I and type II diabetes mellitus), obesity, a disorder related to pituitary glands (e.g., hyperpituitarism, hypopituitarism, and pituitary dwarfism), hypothyroidism, hyperthyroidism, goiter, reproductive disorders (e.g. male and female infertility), a disorder related to adrenal glands (e.g., Addison's Disease, corticosteroid deficiency, and Cushing's Syndrome), kidney cancer (e.g., hypernephroma, transitional cell cancer, and Wilm's tumor), diabetic nephropathy, interstitial nephritis, polycystic kidney disease, glomerulonephritis (e.g., IgM mesangial proliferative glomerulonephritis and glomerulonephritis caused by an autoimmune disorder; such as
- 5
- 10 Goodpasture's syndrome), and nephrocalcinosis.

In additional embodiments, a Therapeutic protein having a "Digestive" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to, for example, a  
5 neoplastic disease (e.g., as described below under "Hyperproliferative Disorders") and/or a disease or disorder of the gastrointestinal system (e.g., as described below under "Gastrointestinal Disorders").

In other embodiments, a Therapeutic protein having a "Digestive" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a  
10 Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: ulcerative colitis, appendicitis, Crohn's disease, hepatitis, hepatic encephalopathy, portal hypertension, cholelithiasis, cancer of the digestive system (e.g., biliary tract cancer, stomach cancer, colon cancer, gastric cancer, pancreatic cancer, cancer  
15 of the bile duct, a tumor of the colon (e.g., polyps or cancers), and cirrhosis), pancreatitis, ulcerative disease, pyloric stenosis, gastroenteritis, gastritis, gastric atrophy, a benign tumor of the duodenum, distension, irritable bowel syndrome, malabsorption, a congenital disorder of the small intestine, bacterial and parasitic infection, megacolon, Hirschsprung's disease, aganglionic megacolon, acquired megacolon, colitis, a anorectal  
20 disorder (e.g., anal fistulas, hemorrhoids), a congenital disorder of the liver (e.g., Wilson's disease, hemochromatosis, cystic fibrosis, biliary atresia, and alpha-1 antitrypsin deficiency), portal hypertension, cholelithiasis, and jaundice.

In further embodiments, a Therapeutic protein having a "Connective/Epithelial" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that  
25 comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder relating to a neoplastic disease (e.g., as described below under "Hyperproliferative Disorders"), a cellular and/or genetic abnormality (e.g., as described below under "Diseases at the Cellular Level"), angiogenesis (e.g., as described below under "Anti-Angiogenesis  
30 Activity"), and/or to promote or inhibit regeneration (e.g., as described below under "Regeneration"), and/or wound healing (e.g., as described below under "Wound Healing and Epithelial Cell Proliferation").

In certain embodiments, a Therapeutic protein having a "Connective/Epithelial" recitation in the "Preferred Indication" column of Table 1, an albumin fusion protein that comprises a Therapeutic protein portion corresponding to this Therapeutic protein, and fragments and variants thereof, may be used to treat a disease and/or disorder selected from the group consisting of: connective tissue metaplasia, mixed connective tissue disease, focal epithelial hyperplasia, epithelial metaplasia, mucoepithelial dysplasia, graft v. host disease, polymyositis, cystic hyperplasia, cerebral dysplasia, tissue hypertrophy, Alzheimer's disease, lymphoproliferative disorder, Waldenstrom's macroglobulinemia, Crohn's disease, pernicious anemia, idiopathic Addison's disease, glomerulonephritis, bullous pemphigoid, Sjogren's syndrome, diabetes mellitus, cystic fibrosis, osteoblastoma, osteoclastoma, osteosarcoma, chondrosarcoma, osteoporosis, osteoarthritis, periodontal disease, wound healing, relapsing polychondritis, vasculitis, polyarteritis nodosa, Wegener's granulomatosis, cellulitis, rheumatoid arthritis, psoriatic arthritis, discoid lupus erythematosus, systemic lupus erythematosus, scleroderma, CREST syndrome, Sjogren's syndrome, polymyositis, dermatomyositis, mixed connective tissue disease, relapsing polychondritis, vasculitis, Henoch-Schonlein syndrome, erythema nodosum, polyarteritis nodosa, temporal (giant cell) arteritis, Takayasu's arteritis, Wegener's granulomatosis, Reiter's syndrome, Behcet's syndrome, ankylosing spondylitis, cellulitis, keloids, Ehler Danlos syndrome, Marfan syndrome, pseudoxanthoma elasticum, osteogenesis imperfecta, chondrodysplasias, epidermolysis bullosa, Alport syndrome, and cutis laxa.

In certain embodiments, an albumin fusion protein of the present invention may be used to diagnose and/or prognose diseases and/or disorders associated with the tissue(s) in which the gene corresponding to the Therapeutic protein portion of the fusion portion of the invention is expressed.

Thus, fusion proteins of the invention and polynucleotides encoding albumin fusion proteins of the invention are useful in the diagnosis, detection and/or treatment of diseases and/or disorders associated with activities that include, but are not limited to, prohormone activation, neurotransmitter activity, cellular signaling, cellular proliferation, cellular differentiation, and cell migration.

More generally, fusion proteins of the invention and polynucleotides encoding albumin fusion proteins of the invention may be useful for the diagnosis, prognosis,

prevention and/or treatment of diseases and/or disorders associated with the following systems.

### Immune Activity

5           Albumin fusion proteins of the invention and polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, diagnosing and/or prognosing diseases, disorders, and/or conditions of the immune system, by, for example, activating or inhibiting the proliferation, differentiation, or mobilization (chemotaxis) of immune cells. Immune cells develop through a process called hematopoiesis, producing  
10   myeloid (platelets, red blood cells, neutrophils, and macrophages) and lymphoid (B and T lymphocytes) cells from pluripotent stem cells. The etiology of these immune diseases, disorders, and/or conditions may be genetic, somatic, such as cancer and some autoimmune diseases, acquired (e.g., by chemotherapy or toxins), or infectious. Moreover, fusion proteins of the invention and/or polynucleotides encoding albumin  
15   fusion proteins of the invention can be used as a marker or detector of a particular immune system disease or disorder.

          In another embodiment, a fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention, may be used to treat diseases and disorders of the immune system and/or to inhibit or enhance an immune response  
20   generated by cells associated with the tissue(s) in which the polypeptide of the invention is expressed.

          Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, diagnosing, and/or prognosing immunodeficiencies, including both congenital and acquired  
25   immunodeficiencies. Examples of B cell immunodeficiencies in which immunoglobulin levels B cell function and/or B cell numbers are decreased include: X-linked agammaglobulinemia (Bruton's disease), X-linked infantile agammaglobulinemia, X-linked immunodeficiency with hyper IgM, non X-linked immunodeficiency with hyper IgM, X-linked lymphoproliferative syndrome (XLP), agammaglobulinemia including  
30   congenital and acquired agammaglobulinemia, adult onset agammaglobulinemia, late-onset agammaglobulinemia, dysgammaglobulinemia, hypogammaglobulinemia, unspecified hypogammaglobulinemia, recessive agammaglobulinemia (Swiss type),

Selective IgM deficiency, selective IgA deficiency, selective IgG subclass deficiencies, IgG subclass deficiency (with or without IgA deficiency), Ig deficiency with increased IgM, IgG and IgA deficiency with increased IgM, antibody deficiency with normal or elevated Igs, Ig heavy chain deletions, kappa chain deficiency, B cell lymphoproliferative disorder (BLPD), common variable immunodeficiency (CVID), common variable immunodeficiency (CVI) (acquired), and transient hypogammaglobulinemia of infancy.

In specific embodiments, ataxia-telangiectasia or conditions associated with ataxia-telangiectasia are treated, prevented, diagnosed, and/or prognosing using the, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention.

Examples of congenital immunodeficiencies in which T cell and/or B cell function and/or number is decreased include, but are not limited to: DiGeorge anomaly, severe combined immunodeficiencies (SCID) (including, but not limited to, X-linked SCID, autosomal recessive SCID, adenosine deaminase deficiency, purine nucleoside phosphorylase (PNP) deficiency, Class II MHC deficiency (Bare lymphocyte syndrome), Wiskott-Aldrich syndrome, and ataxia telangiectasia), thymic hypoplasia, third and fourth pharyngeal pouch syndrome, 22q11.2 deletion, chronic mucocutaneous candidiasis, natural killer cell deficiency (NK), idiopathic CD4+ T-lymphocytopenia, immunodeficiency with predominant T cell defect (unspecified), and unspecified immunodeficiency of cell mediated immunity.

In specific embodiments, DiGeorge anomaly or conditions associated with DiGeorge anomaly are treated, prevented, diagnosed, and/or prognosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention.

Other immunodeficiencies that may be treated, prevented, diagnosed, and/or prognosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include, but are not limited to, chronic granulomatous disease, Chédiak-Higashi syndrome, myeloperoxidase deficiency, leukocyte glucose-6-phosphate dehydrogenase deficiency, X-linked lymphoproliferative syndrome (XLP), leukocyte adhesion deficiency, complement component deficiencies (including C1, C2, C3, C4, C5, C6, C7, C8 and/or C9 deficiencies), reticular dysgenesis, thymic aplasia, immunodeficiency with thymoma, severe congenital leukopenia,

dysplasia with immunodeficiency, neonatal neutropenia, short limbed dwarfism, and Nezelof syndrome-combined immunodeficiency with Igs.

In a preferred embodiment, the immunodeficiencies and/or conditions associated with the immunodeficiencies recited above are treated, prevented, diagnosed and/or  
5 prognosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention.

In a preferred embodiment fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention could be used as an agent to boost immunoresponsiveness among immunodeficient individuals. In specific embodiments,  
10 fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention could be used as an agent to boost immunoresponsiveness among B cell and/or T cell immunodeficient individuals.

The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, diagnosing  
15 and/or prognosing autoimmune disorders. Many autoimmune disorders result from inappropriate recognition of self as foreign material by immune cells. This inappropriate recognition results in an immune response leading to the destruction of the host tissue. Therefore, the administration of fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention that can inhibit an immune response,  
20 particularly the proliferation, differentiation, or chemotaxis of T-cells, may be an effective therapy in preventing autoimmune disorders.

Autoimmune diseases or disorders that may be treated, prevented, diagnosed and/or prognosed by fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, one or more of the  
25 following: systemic lupus erythematosus, rheumatoid arthritis, ankylosing spondylitis, multiple sclerosis, autoimmune thyroiditis, Hashimoto's thyroiditis, autoimmune hemolytic anemia, hemolytic anemia, thrombocytopenia, autoimmune thrombocytopenia purpura, autoimmune neonatal thrombocytopenia, idiopathic thrombocytopenia purpura, purpura (e.g., Henloch-Scoenlein purpura), autoimmunocytopenia, Goodpasture's  
30 syndrome, Pemphigus vulgaris, myasthenia gravis, Grave's disease (hyperthyroidism), and insulin-resistant diabetes mellitus.

Additional disorders that are likely to have an autoimmune component that may be

treated, prevented, and/or diagnosed with the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, type II collagen-induced arthritis, antiphospholipid syndrome, dermatitis, allergic encephalomyelitis, myocarditis, relapsing polychondritis, rheumatic heart disease, neuritis, uveitis ophthalmia, polyendocrinopathies, Reiter's Disease, Stiff-Man Syndrome, autoimmune pulmonary inflammation, autism, Guillain-Barre Syndrome, insulin dependent diabetes mellitus, and autoimmune inflammatory eye disorders.

Additional disorders that are likely to have an autoimmune component that may be treated, prevented, diagnosed and/or prognosed with the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, scleroderma with anti-collagen antibodies (often characterized, e.g., by nucleolar and other nuclear antibodies), mixed connective tissue disease (often characterized, e.g., by antibodies to extractable nuclear antigens (e.g., ribonucleoprotein)), polymyositis (often characterized, e.g., by nonhistone ANA), pernicious anemia (often characterized, e.g., by antiparietal cell, microsomes, and intrinsic factor antibodies), idiopathic Addison's disease (often characterized, e.g., by humoral and cell-mediated adrenal cytotoxicity, infertility (often characterized, e.g., by antispermatozoal antibodies), glomerulonephritis (often characterized, e.g., by glomerular basement membrane antibodies or immune complexes), bullous pemphigoid (often characterized, e.g., by IgG and complement in basement membrane), Sjogren's syndrome (often characterized, e.g., by multiple tissue antibodies, and/or a specific nonhistone ANA (SS-B)), diabetes mellitus (often characterized, e.g., by cell-mediated and humoral islet cell antibodies), and adrenergic drug resistance (including adrenergic drug resistance with asthma or cystic fibrosis) (often characterized, e.g., by beta-adrenergic receptor antibodies).

Additional disorders that may have an autoimmune component that may be treated, prevented, diagnosed and/or prognosed with the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, chronic active hepatitis (often characterized, e.g., by smooth muscle antibodies), primary biliary cirrhosis (often characterized, e.g., by mitochondria antibodies), other endocrine gland failure (often characterized, e.g., by specific tissue antibodies in some cases), vitiligo (often characterized, e.g., by melanocyte antibodies),

vasculitis (often characterized, e.g., by Ig and complement in vessel walls and/or low serum complement), post-MI (often characterized, e.g., by myocardial antibodies), cardiomy syndrome (often characterized, e.g., by myocardial antibodies), urticaria (often characterized, e.g., by IgG and IgM antibodies to IgE), atopic dermatitis (often characterized, e.g., by IgG and IgM antibodies to IgE), asthma (often characterized, e.g., by IgG and IgM antibodies to IgE), and many other inflammatory, granulomatous, degenerative, and atrophic disorders.

In a preferred embodiment, the autoimmune diseases and disorders and/or conditions associated with the diseases and disorders recited above are treated, prevented, diagnosed and/or prognosed using for example, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention. In a specific preferred embodiment, rheumatoid arthritis is treated, prevented, and/or diagnosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention.

In another specific preferred embodiment, systemic lupus erythematosus is treated, prevented, and/or diagnosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention. In another specific preferred embodiment, idiopathic thrombocytopenia purpura is treated, prevented, and/or diagnosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention.

In another specific preferred embodiment IgA nephropathy is treated, prevented, and/or diagnosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention.

In a preferred embodiment, the autoimmune diseases and disorders and/or conditions associated with the diseases and disorders recited above are treated, prevented, diagnosed and/or prognosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention.

In preferred embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a immunosuppressive agent(s).

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, prognosing, and/or



diagnosing diseases, disorders, and/or conditions of hematopoietic cells. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention could be used to increase differentiation and proliferation of hematopoietic cells, including the pluripotent stem cells, in an effort to treat or prevent those diseases, disorders, and/or conditions associated with a decrease in certain (or many) types of hematopoietic cells, including but not limited to, leukopenia, neutropenia, anemia, and thrombocytopenia. Alternatively, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention could be used to increase differentiation and proliferation of hematopoietic cells, including the pluripotent stem cells, in an effort to treat or prevent those diseases, disorders, and/or conditions associated with an increase in certain (or many) types of hematopoietic cells, including but not limited to, histiocytosis.

Allergic reactions and conditions, such as asthma (particularly allergic asthma) or other respiratory problems, may also be treated, prevented, diagnosed and/or prognosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention. Moreover, these molecules can be used to treat, prevent, prognose, and/or diagnose anaphylaxis, hypersensitivity to an antigenic molecule, or blood group incompatibility.

Additionally, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may be used to treat, prevent, diagnose and/or prognose IgE-mediated allergic reactions. Such allergic reactions include, but are not limited to, asthma, rhinitis, and eczema. In specific embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to modulate IgE concentrations in vitro or in vivo.

Moreover, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention have uses in the diagnosis, prognosis, prevention, and/or treatment of inflammatory conditions. For example, since fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may inhibit the activation, proliferation and/or differentiation of cells involved in an inflammatory response, these molecules can be used to prevent and/or treat chronic and acute inflammatory conditions. Such inflammatory conditions include, but are not limited to, for example, inflammation associated with infection (e.g., septic shock, sepsis, or systemic inflammatory response syndrome), ischemia-reperfusion injury, endotoxin

lethality, complement-mediated hyperacute rejection, nephritis, cytokine or chemokine induced lung injury, inflammatory bowel disease, Crohn's disease, over production of cytokines (e.g., TNF or IL-1.), respiratory disorders (e.g., asthma and allergy); gastrointestinal disorders (e.g., inflammatory bowel disease); cancers (e.g., gastric, ovarian, lung, bladder, liver, and breast); CNS disorders (e.g., multiple sclerosis; ischemic brain injury and/or stroke, traumatic brain injury, neurodegenerative disorders (e.g., Parkinson's disease and Alzheimer's disease); AIDS-related dementia; and prion disease); cardiovascular disorders (e.g., atherosclerosis, myocarditis, cardiovascular disease, and cardiopulmonary bypass complications); as well as many additional diseases, conditions, and disorders that are characterized by inflammation (e.g., hepatitis, rheumatoid arthritis, gout, trauma, pancreatitis, sarcoidosis, dermatitis, renal ischemia-reperfusion injury, Grave's disease, systemic lupus erythematosus, diabetes mellitus, and allogenic transplant rejection).

Because inflammation is a fundamental defense mechanism, inflammatory disorders can effect virtually any tissue of the body. Accordingly, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, have uses in the treatment of tissue-specific inflammatory disorders, including, but not limited to, adrenalitis, alveolitis, angiocholecystitis, appendicitis, balanitis, blepharitis, bronchitis, bursitis, carditis, cellulitis, cervicitis, cholecystitis, chorditis, cochlitis, colitis, conjunctivitis, cystitis, dermatitis, diverticulitis, encephalitis, endocarditis, esophagitis, eustachitis, fibrositis, folliculitis, gastritis, gastroenteritis, gingivitis, glossitis, hepatosplenitis, keratitis, labyrinthitis, laryngitis, lymphangitis, mastitis, media otitis, meningitis, metritis, mucitis, myocarditis, myositis, myringitis, nephritis, neuritis, orchitis, osteochondritis, otitis, pericarditis, peritendonitis, peritonitis, pharyngitis, phlebitis, poliomyelitis, prostatitis, pulpitis, retinitis, rhinitis, salpingitis, scleritis, sclerochoroiditis, scrotitis, sinusitis, spondylitis, steatitis, stomatitis, synovitis, syringitis, tendonitis, tonsillitis, urethritis, and vaginitis.

In specific embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, are useful to diagnose, prognose, prevent, and/or treat organ transplant rejections and graft-versus-host disease. Organ rejection occurs by host immune cell destruction of the transplanted tissue through an immune response. Similarly, an immune response is also involved in GVHD, but, in this

case, the foreign transplanted immune cells destroy the host tissues. Polypeptides, antibodies, or polynucleotides of the invention, and/or agonists or antagonists thereof, that inhibit an immune response, particularly the activation, proliferation, differentiation, or chemotaxis of T-cells, may be an effective therapy in preventing organ rejection or GVHD. In specific embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, that inhibit an immune response, particularly the activation, proliferation, differentiation, or chemotaxis of T-cells, may be an effective therapy in preventing experimental allergic and hyperacute xenograft rejection.

In other embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, are useful to diagnose, prognose, prevent, and/or treat immune complex diseases, including, but not limited to, serum sickness, post streptococcal glomerulonephritis, polyarteritis nodosa, and immune complex-induced vasculitis.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention can be used to treat, detect, and/or prevent infectious agents. For example, by increasing the immune response, particularly increasing the proliferation activation and/or differentiation of B and/or T cells, infectious diseases may be treated, detected, and/or prevented. The immune response may be increased by either enhancing an existing immune response, or by initiating a new immune response. Alternatively, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may also directly inhibit the infectious agent (refer to section of application listing infectious agents, etc), without necessarily eliciting an immune response.

In another embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a vaccine adjuvant that enhances immune responsiveness to an antigen. In a specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an adjuvant to enhance tumor-specific immune responses.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an adjuvant

to enhance anti-viral immune responses. Anti-viral immune responses that may be enhanced using the compositions of the invention as an adjuvant, include virus and virus associated diseases or symptoms described herein or otherwise known in the art. In specific embodiments, the compositions of the invention are used as an adjuvant to enhance an immune response to a virus, disease, or symptom selected from the group consisting of: AIDS, meningitis, Dengue, EBV, and hepatitis (e.g., hepatitis B). In another specific embodiment, the compositions of the invention are used as an adjuvant to enhance an immune response to a virus, disease, or symptom selected from the group consisting of: HIV/AIDS, respiratory syncytial virus, Dengue, rotavirus, Japanese B encephalitis, influenza A and B, parainfluenza, measles, cytomegalovirus, rabies, Junin, Chikungunya, Rift Valley Fever, herpes simplex, and yellow fever.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an adjuvant to enhance anti-bacterial or anti-fungal immune responses. Anti-bacterial or anti-fungal immune responses that may be enhanced using the compositions of the invention as an adjuvant, include bacteria or fungus and bacteria or fungus associated diseases or symptoms described herein or otherwise known in the art. In specific embodiments, the compositions of the invention are used as an adjuvant to enhance an immune response to a bacteria or fungus, disease, or symptom selected from the group consisting of: tetanus, Diphtheria, botulism, and meningitis type B.

In another specific embodiment, the compositions of the invention are used as an adjuvant to enhance an immune response to a bacteria or fungus, disease, or symptom selected from the group consisting of: *Vibrio cholerae*, *Mycobacterium leprae*, *Salmonella typhi*, *Salmonella paratyphi*, *Meissneria meningitidis*, *Streptococcus pneumoniae*, Group B streptococcus, *Shigella spp.*, Enterotoxigenic *Escherichia coli*, Enterohemorrhagic *E. coli*, and *Borrelia burgdorferi*.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an adjuvant to enhance anti-parasitic immune responses. Anti-parasitic immune responses that may be enhanced using the compositions of the invention as an adjuvant, include parasite and parasite associated diseases or symptoms described herein or otherwise known in the art. In specific embodiments, the compositions of the invention are used as an adjuvant to

enhance an immune response to a parasite. In another specific embodiment, the compositions of the invention are used as an adjuvant to enhance an immune response to Plasmodium (malaria) or Leishmania.

5 In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may also be employed to treat infectious diseases including silicosis, sarcoidosis, and idiopathic pulmonary fibrosis; for example, by preventing the recruitment and activation of mononuclear phagocytes.

10 In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an antigen for the generation of antibodies to inhibit or enhance immune mediated responses against polypeptides of the invention.

15 In one embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are administered to an animal (e.g., mouse, rat, rabbit, hamster, guinea pig, pigs, micro-pig, chicken, camel, goat, horse, cow, sheep, dog, cat, non-human primate, and human, most preferably human) to boost the immune system to produce increased quantities of one or more antibodies (e.g., IgG, IgA, IgM, and IgE), to induce higher affinity antibody production and immunoglobulin class switching (e.g., IgG, IgA, IgM, and IgE), and/or to increase an  
20 immune response.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a stimulator of B cell responsiveness to pathogens.

25 In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an activator of T cells.

30 In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an agent that elevates the immune status of an individual prior to their receipt of immunosuppressive therapies.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an agent to

induce higher affinity antibodies.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an agent to increase serum immunoglobulin concentrations.

5 In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an agent to accelerate recovery of immunocompromised individuals.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an agent to  
10 boost immunoresponsiveness among aged populations and/or neonates.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an immune system enhancer prior to, during, or after bone marrow transplant and/or other transplants (e.g., allogeneic or xenogeneic organ transplantation). With respect to transplantation,  
15 compositions of the invention may be administered prior to, concomitant with, and/or after transplantation. In a specific embodiment, compositions of the invention are administered after transplantation, prior to the beginning of recovery of T-cell populations. In another specific embodiment, compositions of the invention are first administered after transplantation after the beginning of recovery of T cell populations, but prior to full  
20 recovery of B cell populations.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an agent to boost immunoresponsiveness among individuals having an acquired loss of B cell function. Conditions resulting in an acquired loss of B cell function that may be  
25 ameliorated or treated by administering the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include, but are not limited to, HIV Infection, AIDS, bone marrow transplant, and B cell chronic lymphocytic leukemia (CLL).

In another specific embodiment, albumin fusion proteins of the invention and/or  
30 polynucleotides encoding albumin fusion proteins of the invention are used as an agent to boost immunoresponsiveness among individuals having a temporary immune deficiency. Conditions resulting in a temporary immune deficiency that may be ameliorated or treated

by administering the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include, but are not limited to, recovery from viral infections (e.g., influenza), conditions associated with malnutrition, recovery from infectious mononucleosis, or conditions associated with stress, recovery from measles, recovery from blood transfusion, and recovery from surgery.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a regulator of antigen presentation by monocytes, dendritic cells, and/or B-cells. In one embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention enhance antigen presentation or antagonizes antigen presentation in vitro or in vivo. Moreover, in related embodiments, this enhancement or antagonism of antigen presentation may be useful as an anti-tumor treatment or to modulate the immune system.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as an agent to direct an individual's immune system towards development of a humoral response (i.e. TH2) as opposed to a TH1 cellular response.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a means to induce tumor proliferation and thus make it more susceptible to anti-neoplastic agents. For example, multiple myeloma is a slowly dividing disease and is thus refractory to virtually all anti-neoplastic regimens. If these cells were forced to proliferate more rapidly their susceptibility profile would likely change.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a stimulator of B cell production in pathologies such as AIDS, chronic lymphocyte disorder and/or Common Variable Immunodeficiency.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a therapy for generation and/or regeneration of lymphoid tissues following surgery, trauma or genetic defect. In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used in the

pretreatment of bone marrow samples prior to transplant.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a gene-based therapy for genetically inherited disorders resulting in immuno-  
5 incompetence/immunodeficiency such as observed among SCID patients.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a means of activating monocytes/macrophages to defend against parasitic diseases that effect monocytes such as Leishmania.

10 In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a means of regulating secreted cytokines that are elicited by polypeptides of the invention.

In another embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used in one or more  
15 of the applications described herein, as they may apply to veterinary medicine.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a means of blocking various aspects of immune responses to foreign agents or self. Examples of diseases or conditions in which blocking of certain aspects of immune responses may be  
20 desired include autoimmune disorders such as lupus, and arthritis, as well as immunoresponsiveness to skin allergies, inflammation, bowel disease, injury and diseases/disorders associated with pathogens.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a therapy  
25 for preventing the B cell proliferation and Ig secretion associated with autoimmune diseases such as idiopathic thrombocytopenic purpura, systemic lupus erythematosus and multiple sclerosis.

In another specific embodiment, polypeptides, antibodies, polynucleotides and/or agonists or antagonists of the present fusion proteins of the invention and/or  
30 polynucleotides encoding albumin fusion proteins of the invention are used as an inhibitor of B and/or T cell migration in endothelial cells. This activity disrupts tissue architecture or cognate responses and is useful, for example in disrupting immune



responses, and blocking sepsis.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a therapy for chronic hypergammaglobulinemia evident in such diseases as monoclonal  
5 gammopathy of undetermined significance (MGUS), Waldenstrom's disease, related idiopathic monoclonal gammopathies, and plasmacytomas.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be employed for instance to inhibit polypeptide chemotaxis and activation of macrophages and their  
10 precursors, and of neutrophils, basophils, B lymphocytes and some T-cell subsets, e.g., activated and CD8 cytotoxic T cells and natural killer cells, in certain autoimmune and chronic inflammatory and infective diseases. Examples of autoimmune diseases are described herein and include multiple sclerosis, and insulin-dependent diabetes.

The albumin fusion proteins of the invention and/or polynucleotides encoding  
15 albumin fusion proteins of the invention may also be employed to treat idiopathic hyper-eosinophilic syndrome by, for example, preventing eosinophil production and migration.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to enhance or inhibit complement mediated cell lysis.

20 In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to enhance or inhibit antibody dependent cellular cytotoxicity.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may also be employed  
25 for treating atherosclerosis, for example, by preventing monocyte infiltration in the artery wall.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be employed to treat adult respiratory distress syndrome (ARDS).

30 In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful for stimulating wound and tissue repair, stimulating angiogenesis, and/or stimulating the

repair of vascular or lymphatic diseases or disorders. Additionally, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to stimulate the regeneration of mucosal surfaces.

In a specific embodiment, albumin fusion proteins of the invention and/or  
5 polynucleotides encoding albumin fusion proteins of the invention are used to diagnose, prognose, treat, and/or prevent a disorder characterized by primary or acquired immunodeficiency, deficient serum immunoglobulin production, recurrent infections, and/or immune system dysfunction. Moreover, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to treat or  
10 prevent infections of the joints, bones, skin, and/or parotid glands, blood-borne infections (e.g., sepsis, meningitis, septic arthritis, and/or osteomyelitis), autoimmune diseases (e.g., those disclosed herein), inflammatory disorders, and malignancies, and/or any disease or disorder or condition associated with these infections, diseases, disorders and/or malignancies) including, but not limited to, CVID, other primary immune deficiencies,  
15 HIV disease, CLL, recurrent bronchitis, sinusitis, otitis media, conjunctivitis, pneumonia, hepatitis, meningitis, herpes zoster (e.g., severe herpes zoster), and/or pneumocystis carinii. Other diseases and disorders that may be prevented, diagnosed, prognosed, and/or treated with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, HIV infection, HTLV-BLV  
20 infection, lymphopenia, phagocyte bactericidal dysfunction anemia, thrombocytopenia, and hemoglobinuria.

In another embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat, and/or diagnose an individual having common variable immunodeficiency disease ("CVID"; also  
25 known as "acquired agammaglobulinemia" and "acquired hypogammaglobulinemia") or a subset of this disease.

In a specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to diagnose, prognose, prevent, and/or treat cancers or neoplasms including immune cell or  
30 immune tissue-related cancers or neoplasms. Examples of cancers or neoplasms that may be prevented, diagnosed, or treated by fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not

limited to, acute myelogenous leukemia, chronic myelogenous leukemia, Hodgkin's disease, non-Hodgkin's lymphoma, acute lymphocytic anemia (ALL) Chronic lymphocyte leukemia, plasmacytomas, multiple myeloma, Burkitt's lymphoma, EBV-transformed diseases, and/or diseases and disorders described in the section entitled  
5 "Hyperproliferative Disorders" elsewhere herein.

In another specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used as a therapy for decreasing cellular proliferation of Large B-cell Lymphomas.

In another specific embodiment, albumin fusion proteins of the invention and/or  
10 polynucleotides encoding albumin fusion proteins of the invention are used as a means of decreasing the involvement of B cells and Ig associated with Chronic Myelogenous Leukemia.

In specific embodiments, the compositions of the invention are used as an agent to boost immunoresponsiveness among B cell immunodeficient individuals, such as, for  
15 example, an individual who has undergone a partial or complete splenectomy.

#### **Blood-Related Disorders**

The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to modulate hemostatic (the stopping  
20 of bleeding) or thrombolytic (clot dissolving) activity. For example, by increasing hemostatic or thrombolytic activity, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention could be used to treat or prevent blood coagulation diseases, disorders, and/or conditions (e.g., afibrinogenemia, factor deficiencies, hemophilia), blood platelet diseases, disorders, and/or conditions (e.g.,  
25 thrombocytopenia), or wounds resulting from trauma, surgery, or other causes. Alternatively, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention that can decrease hemostatic or thrombolytic activity could be used to inhibit or dissolve clotting. These molecules could be important in the treatment or prevention of heart attacks (infarction), strokes, or scarring.

30 In specific embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to prevent, diagnose, prognose, and/or treat thrombosis, arterial thrombosis, venous thrombosis,

thromboembolism, pulmonary embolism, atherosclerosis, myocardial infarction, transient ischemic attack, unstable angina. In specific embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used for the prevention of occlusion of saphenous grafts, for reducing the risk of periprocedural thrombosis as might accompany angioplasty procedures, for reducing the risk of stroke in patients with atrial fibrillation including nonrheumatic atrial fibrillation, for reducing the risk of embolism associated with mechanical heart valves and or mitral valves disease. Other uses for the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include, but are not limited to, the prevention of occlusions in extracorporeal devices (e.g., intravascular canulas, vascular access shunts in hemodialysis patients, hemodialysis machines, and cardiopulmonary bypass machines).

In another embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may be used to prevent, diagnose, prognose, and/or treat diseases and disorders of the blood and/or blood forming organs associated with the tissue(s) in which the polypeptide of the invention is expressed.

The fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to modulate hematopoietic activity (the formation of blood cells). For example, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to increase the quantity of all or subsets of blood cells, such as, for example, erythrocytes, lymphocytes (B or T cells), myeloid cells (e.g., basophils, eosinophils, neutrophils, mast cells, macrophages) and platelets. The ability to decrease the quantity of blood cells or subsets of blood cells may be useful in the prevention, detection, diagnosis and/or treatment of anemias and leukopenias described below. Alternatively, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to decrease the quantity of all or subsets of blood cells, such as, for example, erythrocytes, lymphocytes (B or T cells), myeloid cells (e.g., basophils, eosinophils, neutrophils, mast cells, macrophages) and platelets. The ability to decrease the quantity of blood cells or subsets of blood cells may be useful in the prevention, detection, diagnosis and/or treatment of leukocytoses, such as, for example eosinophilia.

The fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to prevent, treat, or diagnose blood dyscrasia.

Anemias are conditions in which the number of red blood cells or amount of hemoglobin (the protein that carries oxygen) in them is below normal. Anemia may be  
5 caused by excessive bleeding, decreased red blood cell production, or increased red blood cell destruction (hemolysis). The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, and/or diagnosing anemias. Anemias that may be treated prevented or diagnosed by the albumin fusion proteins of the invention and/or polynucleotides  
10 encoding albumin fusion proteins of the invention include iron deficiency anemia, hypochromic anemia, microcytic anemia, chlorosis, hereditary sideroblastic anemia, idiopathic acquired sideroblastic anemia, red cell aplasia, megaloblastic anemia (e.g., pernicious anemia, (vitamin B12 deficiency) and folic acid deficiency anemia), aplastic anemia, hemolytic anemias (e.g., autoimmune hemolytic anemia, microangiopathic  
15 hemolytic anemia, and paroxysmal nocturnal hemoglobinuria). The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, and/or diagnosing anemias associated with diseases including but not limited to, anemias associated with systemic lupus erythematosus, cancers, lymphomas, chronic renal disease, and enlarged spleens. The  
20 albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, and/or diagnosing anemias arising from drug treatments such as anemias associated with methyl dopa, dapsone, and/or sulfadiazine. Additionally, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, and/or  
25 diagnosing anemias associated with abnormal red blood cell architecture including but not limited to, hereditary spherocytosis, hereditary elliptocytosis, glucose-6-phosphate dehydrogenase deficiency, and sickle cell anemia.

The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, and/or  
30 diagnosing hemoglobin abnormalities, (e.g., those associated with sickle cell anemia, hemoglobin C disease, hemoglobin S-C disease, and hemoglobin E disease). Additionally, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin

fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating thalassemias, including, but not limited to, major and minor forms of alpha-thalassemia and beta-thalassemia.

In another embodiment, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating bleeding disorders including, but not limited to, thrombocytopenia (e.g., idiopathic thrombocytopenic purpura, and thrombotic thrombocytopenic purpura), Von Willebrand's disease, hereditary platelet disorders (e.g., storage pool disease such as Chediak-Higashi and Hermansky-Pudlak syndromes, thromboxane A<sub>2</sub> dysfunction, thromboasthenia, and Bernard-Soulier syndrome), hemolytic-uremic syndrome, hemophelias such as hemophilia A or Factor VII deficiency and Christmas disease or Factor IX deficiency, Hereditary Hemorrhagic Telangiectasia, also known as Rendu-Osler-Weber syndrome, allergic purpura (Henoch Schonlein purpura) and disseminated intravascular coagulation.

The effect of the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention on the clotting time of blood may be monitored using any of the clotting tests known in the art including, but not limited to, whole blood partial thromboplastin time (PTT), the activated partial thromboplastin time (aPTT), the activated clotting time (ACT), the recalcified activated clotting time, or the Lee-White Clotting time.

Several diseases and a variety of drugs can cause platelet dysfunction. Thus, in a specific embodiment, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating acquired platelet dysfunction such as platelet dysfunction accompanying kidney failure, leukemia, multiple myeloma, cirrhosis of the liver, and systemic lupus erythematosus as well as platelet dysfunction associated with drug treatments, including treatment with aspirin, ticlopidine, nonsteroidal anti-inflammatory drugs (used for arthritis, pain, and sprains), and penicillin in high doses.

In another embodiment, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating diseases and disorders characterized by or associated with increased or decreased numbers of white blood cells: Leukopenia

occurs when the number of white blood cells decreases below normal. Leukopenias include, but are not limited to, neutropenia and lymphocytopenia. An increase in the number of white blood cells compared to normal is known as leukocytosis. The body generates increased numbers of white blood cells during infection. Thus, leukocytosis  
5 may simply be a normal physiological parameter that reflects infection. Alternatively, leukocytosis may be an indicator of injury or other disease such as cancer. Leukocytoses, include but are not limited to, eosinophilia, and accumulations of macrophages. In specific embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating leukopenia. In other specific embodiments, the  
10 albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating leukocytosis.

Leukopenia may be a generalized decrease in all types of white blood cells, or  
15 may be a specific depletion of particular types of white blood cells. Thus, in specific embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating decreases in neutrophil numbers, known as neutropenia. Neutropenias that may be diagnosed, prognosed, prevented, and/or treated by  
20 the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, infantile genetic agranulocytosis, familial neutropenia, cyclic neutropenia, neutropenias resulting from or associated with dietary deficiencies (e.g., vitamin B 12 deficiency or folic acid deficiency), neutropenias resulting from or associated with drug treatments (e.g., antibiotic regimens  
25 such as penicillin treatment, sulfonamide treatment, anticoagulant treatment, anticonvulsant drugs, anti-thyroid drugs, and cancer chemotherapy), and neutropenias resulting from increased neutrophil destruction that may occur in association with some bacterial or viral infections, allergic disorders, autoimmune diseases, conditions in which an individual has an enlarged spleen (e.g., Felty syndrome, malaria and sarcoidosis), and  
30 some drug treatment regimens.

The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing,

preventing, and/or treating lymphocytopenias (decreased numbers of B and/or T lymphocytes), including, but not limited to, lymphocytopenias resulting from or associated with stress, drug treatments (e.g., drug treatment with corticosteroids, cancer chemotherapies, and/or radiation therapies), AIDS infection and/or other diseases such as, for example, cancer, rheumatoid arthritis, systemic lupus erythematosus, chronic infections, some viral infections and/or hereditary disorders (e.g., DiGeorge syndrome, Wiskott-Aldrich Syndrome, severe combined immunodeficiency, ataxia telangiectasia).

The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating diseases and disorders associated with macrophage numbers and/or macrophage function including, but not limited to, Gaucher's disease, Niemann-Pick disease, Letterer-Siwe disease and Hand-Schuller-Christian disease.

In another embodiment, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating diseases and disorders associated with eosinophil numbers and/or eosinophil function including, but not limited to, idiopathic hypereosinophilic syndrome, eosinophilia-myalgia syndrome, and Hand-Schuller-Christian disease.

In yet another embodiment, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating leukemias and lymphomas including, but not limited to, acute lymphocytic (lymphoblastic) leukemia (ALL), acute myeloid (myelocytic, myelogenous, myeloblastic, or myelomonocytic) leukemia, chronic lymphocytic leukemia (e.g., B cell leukemias, T cell leukemias, Sezary syndrome, and Hairy cell leukemia), chronic myelocytic (myeloid, myelogenous, or granulocytic) leukemia, Hodgkin's lymphoma, non-hodgkin's lymphoma, Burkitt's lymphoma, and mycosis fungoides.

In other embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in diagnosing, prognosing, preventing, and/or treating diseases and disorders of plasma cells including, but not limited to, plasma cell dyscrasias, monoclonal gammaopathies, monoclonal gammopathies of undetermined significance, multiple myeloma,



macroglobulinemia, Waldenstrom's macroglobulinemia, cryoglobulinemia, and Raynaud's phenomenon.

5 In other embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating, preventing, and/or diagnosing myeloproliferative disorders, including but not limited to, polycythemia vera, relative polycythemia, secondary polycythemia, myelofibrosis, acute myelofibrosis, agnogenic myeloid metaplasia, thrombocythemia, (including both primary and secondary thrombocythemia) and chronic myelocytic leukemia.

10 In other embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful as a treatment prior to surgery, to increase blood cell production.

15 In other embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful as an agent to enhance the migration, phagocytosis, superoxide production, antibody dependent cellular cytotoxicity of neutrophils, eosinophils and macrophages.

20 In other embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful as an agent to increase the number of stem cells in circulation prior to stem cells pheresis. In another specific embodiment, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful as an agent to increase the number of stem cells in circulation prior to platelet pheresis.

25 In other embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful as an agent to increase cytokine production.

In other embodiments, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in preventing, diagnosing, and/or treating primary hematopoietic disorders.

30

#### **Hyperproliferative Disorders**

In certain embodiments, fusion proteins of the invention and/or polynucleotides

encoding albumin fusion proteins of the invention can be used to treat or detect hyperproliferative disorders, including neoplasms. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may inhibit the proliferation of the disorder through direct or indirect interactions.

5 Alternatively, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may proliferate other cells which can inhibit the hyperproliferative disorder.

For example, by increasing an immune response, particularly increasing antigenic qualities of the hyperproliferative disorder or by proliferating, differentiating, or mobilizing T-cells, hyperproliferative disorders can be treated. This immune response  
10 may be increased by either enhancing an existing immune response, or by initiating a new immune response. Alternatively, decreasing an immune response may also be a method of treating hyperproliferative disorders, such as a chemotherapeutic agent.

Examples of hyperproliferative disorders that can be treated or detected by fusion  
15 proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to neoplasms located in the: colon, abdomen, bone, breast, digestive system, liver, pancreas, peritoneum, endocrine glands (adrenal, parathyroid, pituitary, testicles, ovary, thymus, thyroid), eye, head and neck, nervous (central and peripheral), lymphatic system, pelvis, skin, soft tissue, spleen, thorax, and  
20 urogenital tract.

Similarly, other hyperproliferative disorders can also be treated or detected by fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention. Examples of such hyperproliferative disorders include, but are not limited to: Acute Childhood Lymphoblastic Leukemia, Acute Lymphoblastic Leukemia,  
25 Acute Lymphocytic Leukemia, Acute Myeloid Leukemia, Adrenocortical Carcinoma, Adult (Primary) Hepatocellular Cancer, Adult (Primary) Liver Cancer, Adult Acute Lymphocytic Leukemia, Adult Acute Myeloid Leukemia, Adult Hodgkin's Disease, Adult Hodgkin's Lymphoma, Adult Lymphocytic Leukemia, Adult Non-Hodgkin's Lymphoma, Adult Primary Liver Cancer, Adult Soft Tissue Sarcoma, AIDS-Related Lymphoma,  
30 AIDS-Related Malignancies, Anal Cancer, Astrocytoma, Bile Duct Cancer, Bladder Cancer, Bone Cancer, Brain Stem Glioma, Brain Tumors, Breast Cancer, Cancer of the Renal Pelvis and Ureter, Central Nervous System (Primary) Lymphoma, Central Nervous

System Lymphoma, Cerebellar Astrocytoma, Cerebral Astrocytoma, Cervical Cancer, Childhood (Primary) Hepatocellular Cancer, Childhood (Primary) Liver Cancer, Childhood Acute Lymphoblastic Leukemia, Childhood Acute Myeloid Leukemia, Childhood Brain Stem Glioma, Childhood Cerebellar Astrocytoma, Childhood Cerebral

5 Astrocytoma, Childhood Extracranial Germ Cell Tumors, Childhood Hodgkin's Disease, Childhood Hodgkin's Lymphoma, Childhood Hypothalamic and Visual Pathway Glioma, Childhood Lymphoblastic Leukemia, Childhood Medulloblastoma, Childhood Non-Hodgkin's Lymphoma, Childhood Pineal and Supratentorial Primitive Neuroectodermal Tumors, Childhood Primary Liver Cancer, Childhood Rhabdomyosarcoma, Childhood

10 Soft Tissue Sarcoma, Childhood Visual Pathway and Hypothalamic Glioma, Chronic Lymphocytic Leukemia, Chronic Myelogenous Leukemia, Colon Cancer, Cutaneous T-Cell Lymphoma, Endocrine Pancreas Islet Cell Carcinoma, Endometrial Cancer, Ependymoma, Epithelial Cancer, Esophageal Cancer, Ewing's Sarcoma and Related Tumors, Exocrine Pancreatic Cancer, Extracranial Germ Cell Tumor, Extragonadal Germ

15 Cell Tumor, Extrahepatic Bile Duct Cancer, Eye Cancer, Female Breast Cancer, Gaucher's Disease, Gallbladder Cancer, Gastric Cancer, Gastrointestinal Carcinoid Tumor, Gastrointestinal Tumors, Germ Cell Tumors, Gestational Trophoblastic Tumor, Hairy Cell Leukemia, Head and Neck Cancer, Hepatocellular Cancer, Hodgkin's Disease, Hodgkin's Lymphoma, Hypergammaglobulinemia, Hypopharyngeal Cancer, Intestinal Cancers,

20 Intraocular Melanoma, Islet Cell Carcinoma, Islet Cell Pancreatic Cancer, Kaposi's Sarcoma, Kidney Cancer, Laryngeal Cancer, Lip and Oral Cavity Cancer, Liver Cancer, Lung Cancer, Lymphoproliferative Disorders, Macroglobulinemia, Male Breast Cancer, Malignant Mesothelioma, Malignant Thymoma, Medulloblastoma, Melanoma, Mesothelioma, Metastatic Occult Primary Squamous Neck Cancer, Metastatic Primary

25 Squamous Neck Cancer, Metastatic Squamous Neck Cancer, Multiple Myeloma, Multiple Myeloma/Plasma Cell Neoplasm, Myelodysplastic Syndrome, Myelogenous Leukemia, Myeloid Leukemia, Myeloproliferative Disorders, Nasal Cavity and Paranasal Sinus Cancer, Nasopharyngeal Cancer, Neuroblastoma, Non-Hodgkin's Lymphoma During Pregnancy, Nonmelanoma Skin Cancer, Non-Small Cell Lung Cancer, Occult Primary

30 Metastatic Squamous Neck Cancer, Oropharyngeal Cancer, Osteo-/Malignant Fibrous Sarcoma, Osteosarcoma/Malignant Fibrous Histiocytoma, Osteosarcoma/Malignant Fibrous Histiocytoma of Bone, Ovarian Epithelial Cancer, Ovarian Germ Cell Tumor,

Ovarian Low Malignant Potential Tumor, Pancreatic Cancer, Paraproteinemias, Purpura, Parathyroid Cancer, Penile Cancer, Pheochromocytoma, Pituitary Tumor, Plasma Cell Neoplasm/Multiple Myeloma, Primary Central Nervous System Lymphoma, Primary Liver Cancer, Prostate Cancer, Rectal Cancer, Renal Cell Cancer, Renal Pelvis and Ureter Cancer, Retinoblastoma, Rhabdomyosarcoma, Salivary Gland Cancer, Sarcoidosis Sarcomas, Sezary Syndrome, Skin Cancer, Small Cell Lung Cancer, Small Intestine Cancer, Soft Tissue Sarcoma, Squamous Neck Cancer, Stomach Cancer, Supratentorial Primitive Neuroectodermal and Pineal Tumors, T-Cell Lymphoma, Testicular Cancer, Thymoma, Thyroid Cancer, Transitional Cell Cancer of the Renal Pelvis and Ureter, Transitional Renal Pelvis and Ureter Cancer, Trophoblastic Tumors, Ureter and Renal Pelvis Cell Cancer, Urethral Cancer, Uterine Cancer, Uterine Sarcoma, Vaginal Cancer, Visual Pathway and Hypothalamic Glioma, Vulvar Cancer, Waldenstrom's Macroglobulinemia, Wilms' Tumor, and any other hyperproliferative disease, besides neoplasia, located in an organ system listed above.

In another preferred embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to diagnose, prognose, prevent, and/or treat premalignant conditions and to prevent progression to a neoplastic or malignant state, including but not limited to those disorders described above. Such uses are indicated in conditions known or suspected of preceding progression to neoplasia or cancer, in particular, where non-neoplastic cell growth consisting of hyperplasia, metaplasia, or most particularly, dysplasia has occurred (for review of such abnormal growth conditions, see Robbins and Angell, 1976, Basic Pathology, 2d Ed., W. B. Saunders Co., Philadelphia, pp. 68-79.)

Hyperplasia is a form of controlled cell proliferation, involving an increase in cell number in a tissue or organ, without significant alteration in structure or function. Hyperplastic disorders which can be diagnosed, prognosed, prevented, and/or treated with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, angiofollicular mediastinal lymph node hyperplasia, angiolymphoid hyperplasia with eosinophilia, atypical melanocytic hyperplasia, basal cell hyperplasia, benign giant lymph node hyperplasia, cementum hyperplasia, congenital adrenal hyperplasia, congenital sebaceous hyperplasia, cystic hyperplasia, cystic hyperplasia of the breast, denture hyperplasia, ductal hyperplasia,

endometrial hyperplasia, fibromuscular hyperplasia, focal epithelial hyperplasia, gingival hyperplasia, inflammatory fibrous hyperplasia, inflammatory papillary hyperplasia, intravascular papillary endothelial hyperplasia, nodular hyperplasia of prostate, nodular regenerative hyperplasia, pseudoepitheliomatous hyperplasia, senile sebaceous  
5 hyperplasia, and verrucous hyperplasia.

Metaplasia is a form of controlled cell growth in which one type of adult or fully differentiated cell substitutes for another type of adult cell. Metaplastic disorders which can be diagnosed, prognosed, prevented, and/or treated with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention  
10 include, but are not limited to, agnogenic myeloid metaplasia, apocrine metaplasia, atypical metaplasia, autoparenchymatous metaplasia, connective tissue metaplasia, epithelial metaplasia, intestinal metaplasia, metaplastic anemia, metaplastic ossification, metaplastic polyps, myeloid metaplasia, primary myeloid metaplasia, secondary myeloid metaplasia, squamous metaplasia, squamous metaplasia of amnion, and symptomatic  
15 myeloid metaplasia.

Dysplasia is frequently a forerunner of cancer, and is found mainly in the epithelia; it is the most disorderly form of non-neoplastic cell growth, involving a loss in individual cell uniformity and in the architectural orientation of cells. Dysplastic cells often have abnormally large, deeply stained nuclei, and exhibit pleomorphism. Dysplasia  
20 characteristically occurs where there exists chronic irritation or inflammation. Dysplastic disorders which can be diagnosed, prognosed, prevented, and/or treated with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, anhidrotic ectodermal dysplasia, anterofacial dysplasia, asphyxiating thoracic dysplasia, atriodigital dysplasia, bronchopulmonary  
25 dysplasia, cerebral dysplasia, cervical dysplasia, chondroectodermal dysplasia, cleidocranial dysplasia, congenital ectodermal dysplasia, craniodiaphysial dysplasia, craniocarpotarsal dysplasia, craniometaphysial dysplasia, dentin dysplasia, diaphysial dysplasia, ectodermal dysplasia, enamel dysplasia, encephalo-ophthalmic dysplasia, dysplasia epiphysialis hemimelia, dysplasia epiphysialis multiplex, dysplasia epiphysialis  
30 punctata, epithelial dysplasia, faciodigitogenital dysplasia, familial fibrous dysplasia of jaws, familial white folded dysplasia, fibromuscular dysplasia, fibrous dysplasia of bone, florid osseous dysplasia, hereditary renal-retinal dysplasia, hidrotic ectodermal dysplasia,

hypohidrotic ectodermal dysplasia, lymphopenic thymic dysplasia, mammary dysplasia, mandibulofacial dysplasia, metaphysial dysplasia, Mondini dysplasia, monostotic fibrous dysplasia, mucoepithelial dysplasia, multiple epiphysial dysplasia, oculoauriculovertebral dysplasia, oculodentodigital dysplasia, oculovertbral dysplasia, odontogenic dysplasia, 5 ophthalmomandibulomelic dysplasia, periapical cemental dysplasia, polyostotic fibrous dysplasia, pseudoachondroplastic spondyloepiphysial dysplasia, retinal dysplasia, septo-optic dysplasia, spondyloepiphysial dysplasia, and ventriculoradial dysplasia.

Additional pre-neoplastic disorders which can be diagnosed, prognosed, prevented, and/or treated with fusion proteins of the invention and/or polynucleotides encoding 10 albumin fusion proteins of the invention include, but are not limited to, benign dysproliferative disorders (e.g., benign tumors, fibrocystic conditions, tissue hypertrophy, intestinal polyps, colon polyps, and esophageal dysplasia), leukoplakia, keratoses, Bowen's disease, Farmer's Skin, solar cheilitis, and solar keratosis.

In another embodiment, albumin fusion proteins of the invention and/or 15 polynucleotides encoding albumin fusion proteins of the invention, may be used to diagnose and/or prognose disorders associated with the tissue(s) in which the polypeptide of the invention is expressed.

In another embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention conjugated to a toxin or 20 a radioactive isotope, as described herein, may be used to treat cancers and neoplasms, including, but not limited to, those described herein. In a further preferred embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention conjugated to a toxin or a radioactive isotope, as described herein, may be used to treat acute myelogenous leukemia.

25 Additionally, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may affect apoptosis, and therefore, would be useful in treating a number of diseases associated with increased cell survival or the inhibition of apoptosis. For example, diseases associated with increased cell survival or the inhibition of apoptosis that could be diagnosed, prognosed, prevented, and/or treated 30 by polynucleotides, polypeptides, and/or agonists or antagonists of the invention, include cancers (such as follicular lymphomas, carcinomas with p53 mutations, and hormone-dependent tumors, including, but not limited to colon cancer, cardiac tumors, pancreatic

cancer, melanoma, retinoblastoma, glioblastoma, lung cancer, intestinal cancer, testicular cancer, stomach cancer, neuroblastoma, myxoma, myoma, lymphoma, endothelioma, osteoblastoma, osteoclastoma, osteosarcoma, chondrosarcoma, adenoma, breast cancer, prostate cancer, Kaposi's sarcoma and ovarian cancer); autoimmune disorders such as, multiple sclerosis, Sjogren's syndrome, Hashimoto's thyroiditis, biliary cirrhosis, Behcet's disease, Crohn's disease, polymyositis, systemic lupus erythematosus and immune-related glomerulonephritis and rheumatoid arthritis) and viral infections (such as herpes viruses, pox viruses and adenoviruses), inflammation, graft v. host disease, acute graft rejection, and chronic graft rejection.

10 In preferred embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to inhibit growth, progression, and/or metastasis of cancers, in particular those listed above.

Additional diseases or conditions associated with increased cell survival that could be diagnosed, prognosed, prevented, and/or treated by fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include, but are not limited to, progression, and/or metastases of malignancies and related disorders such as leukemia (including acute leukemias (e.g., acute lymphocytic leukemia, acute myelocytic leukemia (including myeloblastic, promyelocytic, myelomonocytic, monocytic, and erythroleukemia)) and chronic leukemias (e.g., chronic myelocytic (granulocytic) leukemia and chronic lymphocytic leukemia)), polycythemia vera, lymphomas (e.g., Hodgkin's disease and non-Hodgkin's disease), multiple myeloma, Waldenstrom's macroglobulinemia, heavy chain disease, and solid tumors including, but not limited to, sarcomas and carcinomas such as fibrosarcoma, myxosarcoma, liposarcoma, chondrosarcoma, osteogenic sarcoma, chordoma, angiosarcoma, endotheliosarcoma, lymphangiosarcoma, lymphangioendotheliosarcoma, synovioma, mesothelioma, Ewing's tumor, leiomyosarcoma, rhabdomyosarcoma, colon carcinoma, pancreatic cancer, breast cancer, ovarian cancer, prostate cancer, squamous cell carcinoma, basal cell carcinoma, adenocarcinoma, sweat gland carcinoma, sebaceous gland carcinoma, papillary carcinoma, papillary adenocarcinomas, cystadenocarcinoma, medullary carcinoma, bronchogenic carcinoma, renal cell carcinoma, hepatoma, bile duct carcinoma, choriocarcinoma, seminoma, embryonal carcinoma, Wilm's tumor, cervical cancer, testicular tumor, lung carcinoma, small cell lung carcinoma, bladder carcinoma, epithelial carcinoma, glioma,

astrocytoma, medulloblastoma, craniopharyngioma, ependymoma, pinealoma, emangioblastoma, acoustic neuroma, oligodendroglioma, meningioma, melanoma, neuroblastoma, and retinoblastoma.

Diseases associated with increased apoptosis that could be diagnosed, prognosed, prevented, and/or treated by fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include AIDS; neurodegenerative disorders (such as Alzheimer's disease, Parkinson's disease, amyotrophic lateral sclerosis, retinitis pigmentosa, cerebellar degeneration and brain tumor or prior associated disease); autoimmune disorders (such as, multiple sclerosis, Sjogren's syndrome, Hashimoto's thyroiditis, biliary cirrhosis, Behcet's disease, Crohn's disease, polymyositis, systemic lupus erythematosus and immune-related glomerulonephritis and rheumatoid arthritis) myelodysplastic syndromes (such as aplastic anemia), graft v. host disease, ischemic injury (such as that caused by myocardial infarction, stroke and reperfusion injury), liver injury (e.g., hepatitis related liver injury, ischemia/reperfusion injury, cholestasis (bile duct injury) and liver cancer); toxin-induced liver disease (such as that caused by alcohol), septic shock, cachexia and anorexia.

Hyperproliferative diseases and/or disorders that could be diagnosed, prognosed, prevented, and/or treated by fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include, but are not limited to, neoplasms located in the liver, abdomen, bone, breast, digestive system, pancreas, peritoneum, endocrine glands (adrenal, parathyroid, pituitary, testicles, ovary, thymus, thyroid), eye, head and neck, nervous system (central and peripheral), lymphatic system, pelvis, skin, soft tissue, spleen, thorax, and urogenital tract.

Similarly, other hyperproliferative disorders can also be diagnosed, prognosed, prevented, and/or treated by fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention. Examples of such hyperproliferative disorders include, but are not limited to: hypergammaglobulinemia, lymphoproliferative disorders, paraproteinemias, purpura, sarcoidosis, Sezary Syndrome, Waldenström's macroglobulinemia, Gaucher's Disease, histiocytosis, and any other hyperproliferative disease, besides neoplasia, located in an organ system listed above.

Another preferred embodiment utilizes polynucleotides encoding albumin fusion proteins of the invention to inhibit aberrant cellular division, by gene therapy using the



present invention, and/or protein fusions or fragments thereof.

Thus, the present invention provides a method for treating cell proliferative disorders by inserting into an abnormally proliferating cell a polynucleotide encoding an albumin fusion protein of the present invention, wherein said polynucleotide represses said expression.

Another embodiment of the present invention provides a method of treating cell-proliferative disorders in individuals comprising administration of one or more active gene copies of the present invention to an abnormally proliferating cell or cells. In a preferred embodiment, polynucleotides of the present invention is a DNA construct comprising a recombinant expression vector effective in expressing a DNA sequence encoding said polynucleotides. In another preferred embodiment of the present invention, the DNA construct encoding the fusion protein of the present invention is inserted into cells to be treated utilizing a retrovirus, or more preferably an adenoviral vector (See G J. Nabel, et. al., PNAS 1999 96: 324-326, which is hereby incorporated by reference). In a most preferred embodiment, the viral vector is defective and will not transform non-proliferating cells, only proliferating cells. Moreover, in a preferred embodiment, the polynucleotides of the present invention inserted into proliferating cells either alone, or in combination with or fused to other polynucleotides, can then be modulated via an external stimulus (i.e. magnetic, specific small molecule, chemical, or drug administration, etc.), which acts upon the promoter upstream of said polynucleotides to induce expression of the encoded protein product. As such the beneficial therapeutic affect of the present invention may be expressly modulated (i.e. to increase, decrease, or inhibit expression of the present invention) based upon said external stimulus.

Polynucleotides of the present invention may be useful in repressing expression of oncogenic genes or antigens. By "repressing expression of the oncogenic genes " is intended the suppression of the transcription of the gene, the degradation of the gene transcript (pre-message RNA), the inhibition of splicing, the destruction of the messenger RNA, the prevention of the post-translational modifications of the protein, the destruction of the protein, or the inhibition of the normal function of the protein.

For local administration to abnormally proliferating cells, polynucleotides of the present invention may be administered by any method known to those of skill in the art including, but not limited to transfection, electroporation, microinjection of cells, or in

vehicles such as liposomes, lipofectin, or as naked polynucleotides, or any other method described throughout the specification. The polynucleotide of the present invention may be delivered by known gene delivery systems such as, but not limited to, retroviral vectors (Gilboa, J. Virology 44:845 (1982); Hocke, Nature 320:275 (1986); Wilson, et al., Proc. Natl. Acad. Sci. U.S.A. 85:3014), vaccinia virus system (Chakrabarty et al., Mol. Cell Biol. 5:3403 (1985) or other efficient DNA delivery systems (Yates et al., Nature 313:812 (1985)) known to those skilled in the art. These references are exemplary only and are hereby incorporated by reference. In order to specifically deliver or transfect cells which are abnormally proliferating and spare non-dividing cells, it is preferable to utilize a retrovirus, or adenoviral (as described in the art and elsewhere herein) delivery system known to those of skill in the art. Since host DNA replication is required for retroviral DNA to integrate and the retrovirus will be unable to self replicate due to the lack of the retrovirus genes needed for its life cycle. Utilizing such a retroviral delivery system for polynucleotides of the present invention will target said gene and constructs to abnormally proliferating cells and will spare the non-dividing normal cells.

The polynucleotides of the present invention may be delivered directly to cell proliferative disorder/disease sites in internal organs, body cavities and the like by use of imaging devices used to guide an injecting needle directly to the disease site. The polynucleotides of the present invention may also be administered to disease sites at the time of surgical intervention.

By "cell proliferative disease" is meant any human or animal disease or disorder, affecting any one or any combination of organs, cavities, or body parts, which is characterized by single or multiple local abnormal proliferations of cells, groups of cells, or tissues, whether benign or malignant.

Any amount of the polynucleotides of the present invention may be administered as long as it has a biologically inhibiting effect on the proliferation of the treated cells. Moreover, it is possible to administer more than one of the polynucleotide of the present invention simultaneously to the same site. By "biologically inhibiting" is meant partial or total growth inhibition as well as decreases in the rate of proliferation or growth of the cells. The biologically inhibitory dose may be determined by assessing the effects of the polynucleotides of the present invention on target malignant or abnormally proliferating cell growth in tissue culture, tumor growth in animals and cell cultures, or any other

method known to one of ordinary skill in the art.

Moreover, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention of the present invention are useful in inhibiting the angiogenesis of proliferative cells or tissues, either alone, as a protein fusion; or in  
5 combination with other polypeptides directly or indirectly, as described elsewhere herein. In a most preferred embodiment, said anti-angiogenesis effect may be achieved indirectly, for example, through the inhibition of hematopoietic, tumor-specific cells, such as tumor-associated macrophages (See Joseph IB, et al. J Natl Cancer Inst, 90(21):1648-53 (1998), which is hereby incorporated by reference).

10 Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in inhibiting proliferative cells or tissues through the induction of apoptosis. These fusion proteins and/or polynucleotides may act either directly, or indirectly to induce apoptosis of proliferative cells and tissues, for example in the activation of a death-domain receptor, such as tumor necrosis factor (TNF)  
15 receptor-1, CD95 (Fas/APO-1), TNF-receptor-related apoptosis-mediated protein (TRAMP) and TNF-related apoptosis-inducing ligand (TRAIL) receptor-1 and -2 (See Schulze-Osthoff K, et.al., Eur J Biochem 254(3):439-59 (1998), which is hereby incorporated by reference). Moreover, in another preferred embodiment of the present invention, these fusion proteins and/or polynucleotides may induce apoptosis through  
20 other mechanisms, such as in the activation of other proteins which will activate apoptosis, or through stimulating the expression of these proteins, either alone or in combination with small molecule drugs or adjuvants, such as apoptonin, galectins, thioredoxins, anti-inflammatory proteins (See for example, Mutat Res 400(1-2):447-55 (1998), Med Hypotheses.50(5):423-33 (1998), Chem Biol Interact. Apr 24;111-112:23-34 (1998), J  
25 Mol Med.76(6):402-12 (1998), Int J Tissue React;20(1):3-15 (1998), which are all hereby incorporated by reference).

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are useful in inhibiting the metastasis of proliferative cells or tissues. Inhibition may occur as a direct result of administering these albumin fusion  
30 proteins and/or polynucleotides, or indirectly, such as activating the expression of proteins known to inhibit metastasis, for example alpha 4 integrins, (See, e.g., Curr Top Microbiol Immunol 1998;231:125-41, which is hereby incorporated by reference). Such thereapeutic

affects of the present invention may be achieved either alone, or in combination with small molecule drugs or adjuvants.

In another embodiment, the invention provides a method of delivering compositions containing the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention to targeted cells expressing the a polypeptide bound by, that binds to, or associates with an albumin fusion protein of the invention. Albumin fusion proteins of the invention may be associated with with heterologous polypeptides, heterologous nucleic acids, toxins, or prodrugs via hydrophobic, hydrophilic, ionic and/or covalent interactions.

Albumin fusion proteins of the invention are useful in enhancing the immunogenicity and/or antigenicity of proliferating cells or tissues, either directly, such as would occur if the albumin fusion proteins of the invention 'vaccinated' the immune response to respond to proliferative antigens and immunogens, or indirectly, such as in activating the expression of proteins known to enhance the immune response (e.g. chemokines), to said antigens and immunogens.

### **Renal Disorders**

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may be used to treat, prevent, diagnose, and/or prognose disorders of the renal system. Renal disorders which can be diagnosed, prognosed, prevented, and/or treated with compositions of the invention include, but are not limited to, kidney failure, nephritis, blood vessel disorders of kidney, metabolic and congenital kidney disorders, urinary disorders of the kidney, autoimmune disorders, sclerosis and necrosis, electrolyte imbalance, and kidney cancers.

Kidney diseases which can be diagnosed, prognosed, prevented, and/or treated with compositions of the invention include, but are not limited to, acute kidney failure, chronic kidney failure, atheroembolic renal failure, end-stage renal disease, inflammatory diseases of the kidney (e.g., acute glomerulonephritis, postinfectious glomerulonephritis, rapidly progressive glomerulonephritis, nephrotic syndrome, membranous glomerulonephritis, familial nephrotic syndrome, membranoproliferative glomerulonephritis I and II, mesangial proliferative glomerulonephritis, chronic glomerulonephritis, acute

tubulointerstitial nephritis, chronic tubulointerstitial nephritis, acute post-streptococcal glomerulonephritis (PSGN), pyelonephritis, lupus nephritis, chronic nephritis, interstitial nephritis, and post-streptococcal glomerulonephritis), blood vessel disorders of the kidneys (e.g., kidney infarction, atheroembolic kidney disease, cortical necrosis, malignant nephrosclerosis, renal vein thrombosis, renal underperfusion, renal retinopathy, renal ischemia-reperfusion, renal artery embolism, and renal artery stenosis), and kidney disorders resulting from urinary tract disease (e.g., pyelonephritis, hydronephrosis, urolithiasis (renal lithiasis, nephrolithiasis), reflux nephropathy, urinary tract infections, urinary retention, and acute or chronic unilateral obstructive uropathy.)

10 In addition, compositions of the invention can be used to diagnose, prognose, prevent, and/or treat metabolic and congenital disorders of the kidney (e.g., uremia, renal amyloidosis, renal osteodystrophy, renal tubular acidosis, renal glycosuria, nephrogenic diabetes insipidus, cystinuria, Fanconi's syndrome, renal fibrocystic osteosis (renal rickets), Hartnup disease, Bartter's syndrome, Liddle's syndrome, polycystic kidney disease, medullary cystic disease, medullary sponge kidney, Alport's syndrome, nail-  
15 patella syndrome, congenital nephrotic syndrome, CRUSH syndrome, horseshoe kidney, diabetic nephropathy, nephrogenic diabetes insipidus, analgesic nephropathy, kidney stones, and membranous nephropathy), and autoimmune disorders of the kidney (e.g., systemic lupus erythematosus (SLE), Goodpasture syndrome, IgA nephropathy, and IgM  
20 mesangial proliferative glomerulonephritis).

Compositions of the invention can also be used to diagnose, prognose, prevent, and/or treat sclerotic or necrotic disorders of the kidney (e.g., glomerulosclerosis, diabetic nephropathy, focal segmental glomerulosclerosis (FSGS), necrotizing glomerulonephritis, and renal papillary necrosis), cancers of the kidney (e.g., nephroma, hypernephroma, nephroblastoma, renal cell cancer, transitional cell cancer, renal adenocarcinoma, squamous cell cancer, and Wilm's tumor), and electrolyte imbalances (e.g., nephrocalcinosis, pyuria, edema, hydronephritis, proteinuria, hyponatremia, hypernatremia, hypokalemia, hyperkalemia, hypocalcemia, hypercalcemia, hypophosphatemia, and hyperphosphatemia).

30 Compositions of the invention may be administered using any method known in the art, including, but not limited to, direct needle injection at the delivery site, intravenous injection, topical administration, catheter infusion, biolistic injectors, particle accelerators,

gelfoam sponge depots, other commercially available depot materials, osmotic pumps, oral or suppository solid pharmaceutical formulations, decanting or topical applications during surgery, aerosol delivery. Such methods are known in the art. Compositions of the invention may be administered as part of a Therapeutic, described in more detail below.

5 Methods of delivering polynucleotides of the invention are described in more detail herein.

### **Cardiovascular Disorders**

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin  
10 fusion proteins of the invention, may be used to treat, prevent, diagnose, and/or prognose cardiovascular disorders, including, but not limited to, peripheral artery disease, such as limb ischemia.

Cardiovascular disorders include, but are not limited to, cardiovascular  
abnormalities, such as arterio-arterial fistula, arteriovenous fistula, cerebral arteriovenous  
15 malformations, congenital heart defects, pulmonary atresia, and Scimitar Syndrome. Congenital heart defects include, but are not limited to, aortic coarctation, cor triatriatum, coronary vessel anomalies, crisscross heart, dextrocardia, patent ductus arteriosus, Ebstein's anomaly, Eisenmenger complex, hypoplastic left heart syndrome, levocardia, tetralogy of fallot, transposition of great vessels, double outlet right ventricle, tricuspid  
20 atresia, persistent truncus arteriosus, and heart septal defects, such as aortopulmonary septal defect, endocardial cushion defects, Lutembacher's Syndrome, trilogy of Fallot, ventricular heart septal defects.

Cardiovascular disorders also include, but are not limited to, heart disease, such as arrhythmias, carcinoid heart disease, high cardiac output, low cardiac output, cardiac  
25 tamponade, endocarditis (including bacterial), heart aneurysm, cardiac arrest, congestive heart failure, congestive cardiomyopathy, paroxysmal dyspnea, cardiac edema, heart hypertrophy, congestive cardiomyopathy, left ventricular hypertrophy, right ventricular hypertrophy, post-infarction heart rupture, ventricular septal rupture, heart valve diseases, myocardial diseases, myocardial ischemia, pericardial effusion, pericarditis (including  
30 constrictive and tuberculous), pneumopericardium, postpericardiotomy syndrome, pulmonary heart disease, rheumatic heart disease, ventricular dysfunction, hyperemia, cardiovascular pregnancy complications, Scimitar Syndrome, cardiovascular syphilis, and

cardiovascular tuberculosis.

Arrhythmias include, but are not limited to, sinus arrhythmia, atrial fibrillation, atrial flutter, bradycardia, extrasystole, Adams-Stokes Syndrome, bundle-branch block, sinoatrial block, long QT syndrome, parasystole, Lown-Ganong-Levine Syndrome, Mahaim-type pre-excitation syndrome, Wolff-Parkinson-White syndrome, sick sinus syndrome, tachycardias, and ventricular fibrillation. Tachycardias include paroxysmal tachycardia, supraventricular tachycardia, accelerated idioventricular rhythm, atrioventricular nodal reentry tachycardia, ectopic atrial tachycardia, ectopic junctional tachycardia, sinoatrial nodal reentry tachycardia, sinus tachycardia, Torsades de Pointes, and ventricular tachycardia.

Heart valve diseases include, but are not limited to, aortic valve insufficiency, aortic valve stenosis, heart murmurs, aortic valve prolapse, mitral valve prolapse, tricuspid valve prolapse, mitral valve insufficiency, mitral valve stenosis, pulmonary atresia, pulmonary valve insufficiency, pulmonary valve stenosis, tricuspid atresia, tricuspid valve insufficiency, and tricuspid valve stenosis.

Myocardial diseases include, but are not limited to, alcoholic cardiomyopathy, congestive cardiomyopathy, hypertrophic cardiomyopathy, aortic subvalvular stenosis, pulmonary subvalvular stenosis, restrictive cardiomyopathy, Chagas cardiomyopathy, endocardial fibroelastosis, endomyocardial fibrosis, Kearns Syndrome, myocardial reperfusion injury, and myocarditis.

Myocardial ischemias include, but are not limited to, coronary disease, such as angina pectoris, coronary aneurysm, coronary arteriosclerosis, coronary thrombosis, coronary vasospasm, myocardial infarction and myocardial stunning.

Cardiovascular diseases also include vascular diseases such as aneurysms, angiodysplasia, angiomas, bacillary angiomas, Hippel-Lindau Disease, Klippel-Trenaunay-Weber Syndrome, Sturge-Weber Syndrome, angioneurotic edema, aortic diseases, Takayasu's Arteritis, aortitis, Leriche's Syndrome, arterial occlusive diseases, arteritis, enarteritis, polyarteritis nodosa, cerebrovascular disorders, diabetic angiopathies, diabetic retinopathy, embolisms, thrombosis, erythromelalgia, hemorrhoids, hepatic veno-occlusive disease, hypertension, hypotension, ischemia, peripheral vascular diseases, phlebitis, pulmonary veno-occlusive disease, Raynaud's disease, CREST syndrome, retinal vein occlusion, Scimitar syndrome, superior vena cava syndrome, telangiectasia, ataxia

telangiectasia, hereditary hemorrhagic telangiectasia, varicocele, varicose veins, varicose ulcer, vasculitis, and venous insufficiency.

Aneurysms include, but are not limited to, dissecting aneurysms, false aneurysms, infected aneurysms, ruptured aneurysms, aortic aneurysms, cerebral aneurysms, coronary  
5 aneurysms, heart aneurysms, and iliac aneurysms.

Arterial occlusive diseases include, but are not limited to, arteriosclerosis, intermittent claudication, carotid stenosis, fibromuscular dysplasias, mesenteric vascular occlusion, Moyamoya disease, renal artery obstruction, retinal artery occlusion, and thromboangiitis obliterans.

10 Cerebrovascular disorders include, but are not limited to, carotid artery diseases, cerebral amyloid angiopathy, cerebral aneurysm, cerebral anoxia, cerebral arteriosclerosis, cerebral arteriovenous malformation, cerebral artery diseases, cerebral embolism and thrombosis, carotid artery thrombosis, sinus thrombosis, Wallenberg's syndrome, cerebral hemorrhage, epidural hematoma, subdural hematoma, subarachnoid hemorrhage, cerebral  
15 infarction, cerebral ischemia (including transient), subclavian steal syndrome, periventricular leukomalacia, vascular headache, cluster headache, migraine, and vertebrobasilar insufficiency.

Embolisms include, but are not limited to, air embolisms, amniotic fluid embolisms, cholesterol embolisms, blue toe syndrome, fat embolisms, pulmonary  
20 embolisms, and thromboembolisms. Thrombosis include, but are not limited to, coronary thrombosis, hepatic vein thrombosis, retinal vein occlusion, carotid artery thrombosis, sinus thrombosis, Wallenberg's syndrome, and thrombophlebitis.

Ischemic disorders include, but are not limited to, cerebral ischemia, ischemic colitis, compartment syndromes, anterior compartment syndrome, myocardial ischemia,  
25 reperfusion injuries, and peripheral limb ischemia. Vasculitis includes, but is not limited to, aortitis, arteritis, Behcet's Syndrome, Churg-Strauss Syndrome, mucocutaneous lymph node syndrome, thromboangiitis obliterans, hypersensitivity vasculitis, Schoenlein-Henoch purpura, allergic cutaneous vasculitis, and Wegener's granulomatosis.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin  
30 fusion proteins of the invention may be administered using any method known in the art, including, but not limited to, direct needle injection at the delivery site, intravenous injection, topical administration, catheter infusion, biolistic injectors, particle accelerators,



gelfoam sponge depots, other commercially available depot materials, osmotic pumps, oral or suppository solid pharmaceutical formulations, decanting or topical applications during surgery, aerosol delivery. Such methods are known in the art. Methods of delivering polynucleotides are described in more detail herein.

5

### **Respiratory Disorders**

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used to treat, prevent, diagnose, and/or prognose diseases and/or disorders of the respiratory system.

Diseases and disorders of the respiratory system include, but are not limited to, nasal vestibulitis, nonallergic rhinitis (e.g., acute rhinitis, chronic rhinitis, atrophic rhinitis, vasomotor rhinitis), nasal polyps, and sinusitis, juvenile angiofibromas, cancer of the nose and juvenile papillomas, vocal cord polyps, nodules (singer's nodules), contact ulcers, vocal cord paralysis, laryngoceles, pharyngitis (e.g., viral and bacterial), tonsillitis, tonsillar cellulitis, parapharyngeal abscess, laryngitis, laryngoceles, and throat cancers (e.g., cancer of the nasopharynx, tonsil cancer, larynx cancer), lung cancer (e.g., squamous cell carcinoma, small cell (oat cell) carcinoma, large cell carcinoma, and adenocarcinoma), allergic disorders (eosinophilic pneumonia, hypersensitivity pneumonitis (e.g., extrinsic allergic alveolitis, allergic interstitial pneumonitis, organic dust pneumoconiosis, allergic bronchopulmonary aspergillosis, asthma, Wegener's granulomatosis (granulomatous vasculitis), Goodpasture's syndrome)), pneumonia (e.g., bacterial pneumonia (e.g., *Streptococcus pneumoniae* (pneumococcal pneumonia), *Staphylococcus aureus* (staphylococcal pneumonia), Gram-negative bacterial pneumonia (caused by, e.g., *Klebsiella* and *Pseudomonas spp.*), *Mycoplasma pneumoniae* pneumonia, *Hemophilus influenzae* pneumonia, *Legionella pneumophila* (Legionnaires' disease), and *Chlamydia psittaci* (Psittacosis)), and viral pneumonia (e.g., influenza, chickenpox (varicella).

Additional diseases and disorders of the respiratory system include, but are not limited to bronchiolitis, polio (poliomyelitis), croup, respiratory syncytial viral infection, mumps, erythema infectiosum (fifth disease), roseola infantum, progressive rubella panencephalitis, german measles, and subacute sclerosing panencephalitis, fungal pneumonia (e.g., Histoplasmosis, Coccidioidomycosis, Blastomycosis, fungal infections in

people with severely suppressed immune systems (e.g., cryptococcosis, caused by *Cryptococcus neoformans*; aspergillosis, caused by *Aspergillus spp.*; candidiasis, caused by *Candida*; and mucormycosis)), *Pneumocystis carinii* (pneumocystis pneumonia), atypical pneumonias (e.g., *Mycoplasma* and *Chlamydia spp.*), opportunistic infection pneumonia, nosocomial pneumonia, chemical pneumonitis, and aspiration pneumonia, pleural disorders (e.g., pleurisy, pleural effusion, and pneumothorax (e.g., simple spontaneous pneumothorax, complicated spontaneous pneumothorax, tension pneumothorax)), obstructive airway diseases (e.g., asthma, chronic obstructive pulmonary disease (COPD), emphysema, chronic or acute bronchitis), occupational lung diseases (e.g., silicosis, black lung (coal workers' pneumoconiosis), asbestosis, berylliosis, occupational asthma, byssinosis, and benign pneumoconioses), Infiltrative Lung Disease (e.g., pulmonary fibrosis (e.g., fibrosing alveolitis, usual interstitial pneumonia), idiopathic pulmonary fibrosis, desquamative interstitial pneumonia, lymphoid interstitial pneumonia, histiocytosis X (e.g., Letterer-Siwe disease, Hand-Schüller-Christian disease, eosinophilic granuloma), idiopathic pulmonary hemosiderosis, sarcoidosis and pulmonary alveolar proteinosis), Acute respiratory distress syndrome (also called, e.g., adult respiratory distress syndrome), edema, pulmonary embolism, bronchitis (e.g., viral, bacterial), bronchiectasis, atelectasis, lung abscess (caused by, e.g., *Staphylococcus aureus* or *Legionella pneumophila*), and cystic fibrosis.

### Anti-Angiogenesis Activity

The naturally occurring balance between endogenous stimulators and inhibitors of angiogenesis is one in which inhibitory influences predominate. Rastinejad *et al.*, *Cell* 56:345-355 (1989). In those rare instances in which neovascularization occurs under normal physiological conditions, such as wound healing, organ regeneration, embryonic development, and female reproductive processes, angiogenesis is stringently regulated and spatially and temporally delimited. Under conditions of pathological angiogenesis such as that characterizing solid tumor growth, these regulatory controls fail. Unregulated angiogenesis becomes pathologic and sustains progression of many neoplastic and non-neoplastic diseases. A number of serious diseases are dominated by abnormal neovascularization including solid tumor growth and metastases, arthritis, some types of

eye disorders, and psoriasis. See, e.g., reviews by Moses *et al.*, *Biotech.* 9:630-634 (1991); Folkman *et al.*, *N. Engl. J. Med.*, 333:1757-1763 (1995); Auerbach *et al.*, *J. Microvasc. Res.* 29:401-411 (1985); Folkman, *Advances in Cancer Research*, eds. Klein and Weinhouse, Academic Press, New York, pp. 175-203 (1985); Patz, *Am. J. Ophthalmol.* 94:715-743 (1982); and Folkman *et al.*, *Science* 221:719-725 (1983). In a number of pathological conditions, the process of angiogenesis contributes to the disease state. For example, significant data have accumulated which suggest that the growth of solid tumors is dependent on angiogenesis. Folkman and Klagsbrun, *Science* 235:442-447 (1987).

The present invention provides for treatment of diseases or disorders associated with neovascularization by administration of fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention. Malignant and metastatic conditions which can be treated with the polynucleotides and polypeptides, or agonists or antagonists of the invention include, but are not limited to, malignancies, solid tumors, and cancers described herein and otherwise known in the art (for a review of such disorders, see Fishman *et al.*, *Medicine*, 2d Ed., J. B. Lippincott Co., Philadelphia (1985)). Thus, the present invention provides a method of treating an angiogenesis-related disease and/or disorder, comprising administering to an individual in need thereof a therapeutically effective amount of an albumin fusion protein of the invention and/or polynucleotides encoding an albumin fusion protein of the invention. For example, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be utilized in a variety of additional methods in order to therapeutically treat a cancer or tumor. Cancers which may be treated with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to solid tumors, including prostate, lung, breast, ovarian, stomach, pancreas, larynx, esophagus, testes, liver, parotid, biliary tract, colon, rectum, cervix, uterus, endometrium, kidney, bladder, thyroid cancer; primary tumors and metastases; melanomas; glioblastoma; Kaposi's sarcoma; leiomyosarcoma; non-small cell lung cancer; colorectal cancer; advanced malignancies; and blood born tumors such as leukemias. For example, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be delivered topically, in order to treat cancers such as skin cancer, head and neck tumors, breast tumors, and Kaposi's sarcoma.

Within yet other aspects, fusion proteins of the invention and/or polynucleotides

encoding albumin fusion proteins of the invention may be utilized to treat superficial forms of bladder cancer by, for example, intravesical administration. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be delivered directly into the tumor, or near the tumor site, via injection or a catheter. Of course, as the artisan of ordinary skill will appreciate, the appropriate mode of administration will vary according to the cancer to be treated. Other modes of delivery are discussed herein.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful in treating other disorders, besides cancers, which involve angiogenesis. These disorders include, but are not limited to: benign tumors, for example hemangiomas, acoustic neuromas, neurofibromas, trachomas, and pyogenic granulomas; arteriosclerotic plaques; ocular angiogenic diseases, for example, diabetic retinopathy, retinopathy of prematurity, macular degeneration, corneal graft rejection, neovascular glaucoma, retrolental fibroplasia, rubeosis, retinoblastoma, uveitis and Pterygia (abnormal blood vessel growth) of the eye; rheumatoid arthritis; psoriasis; delayed wound healing; endometriosis; vasculogenesis; granulations; hypertrophic scars (keloids); nonunion fractures; scleroderma; trachoma; vascular adhesions; myocardial angiogenesis; coronary collaterals; cerebral collaterals; arteriovenous malformations; ischemic limb angiogenesis; Osler-Webber Syndrome; plaque neovascularization; telangiectasia; hemophilic joints; angiofibroma; fibromuscular dysplasia; wound granulation; Crohn's disease; and atherosclerosis.

For example, within one aspect of the present invention methods are provided for treating hypertrophic scars and keloids, comprising the step of administering albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention to a hypertrophic scar or keloid.

Within one embodiment of the present invention fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are directly injected into a hypertrophic scar or keloid, in order to prevent the progression of these lesions. This therapy is of particular value in the prophylactic treatment of conditions which are known to result in the development of hypertrophic scars and keloids (e.g., burns), and is preferably initiated after the proliferative phase has had time to progress (approximately 14 days after the initial injury), but before hypertrophic scar or keloid

development. As noted above, the present invention also provides methods for treating neovascular diseases of the eye, including for example, corneal neovascularization, neovascular glaucoma, proliferative diabetic retinopathy, retrolental fibroplasia and macular degeneration.

5           Moreover, Ocular disorders associated with neovascularization which can be treated with the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to: neovascular glaucoma, diabetic retinopathy, retinoblastoma, retrolental fibroplasia, uveitis, retinopathy of prematurity macular degeneration, corneal graft neovascularization, as well as other eye  
10 inflammatory diseases, ocular tumors and diseases associated with choroidal or iris neovascularization. See, e.g., reviews by Waltman *et al.*, *Am. J. Ophthalmol.* 85:704-710 (1978) and Gartner *et al.*, *Surv. Ophthalmol.* 22:291-312 (1978).

          Thus, within one aspect of the present invention methods are provided for treating neovascular diseases of the eye such as corneal neovascularization (including corneal graft  
15 neovascularization), comprising the step of administering to a patient a therapeutically effective amount of a compound (e.g., fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention) to the cornea, such that the formation of blood vessels is inhibited. Briefly, the cornea is a tissue which normally lacks blood vessels. In certain pathological conditions however, capillaries may extend  
20 into the cornea from the pericorneal vascular plexus of the limbus. When the cornea becomes vascularized, it also becomes clouded, resulting in a decline in the patient's visual acuity. Visual loss may become complete if the cornea completely opacitates. A wide variety of disorders can result in corneal neovascularization, including for example, corneal infections (e.g., trachoma, herpes simplex keratitis, leishmaniasis and  
25 onchocerciasis), immunological processes (e.g., graft rejection and Stevens-Johnson's syndrome), alkali burns, trauma, inflammation (of any cause), toxic and nutritional deficiency states, and as a complication of wearing contact lenses.

          Within particularly preferred embodiments of the invention, may be prepared for topical administration in saline (combined with any of the preservatives and antimicrobial  
30 agents commonly used in ocular preparations), and administered in eyedrop form. The solution or suspension may be prepared in its pure form and administered several times daily. Alternatively, anti-angiogenic compositions, prepared as described above, may also

be administered directly to the cornea. Within preferred embodiments, the anti-angiogenic composition is prepared with a muco-adhesive polymer which binds to cornea. Within further embodiments, the anti-angiogenic factors or anti-angiogenic compositions may be utilized as an adjunct to conventional steroid therapy. Topical therapy may also be useful  
5 prophylactically in corneal lesions which are known to have a high probability of inducing an angiogenic response (such as chemical burns). In these instances the treatment, likely in combination with steroids, may be instituted immediately to help prevent subsequent complications.

Within other embodiments, the compounds described above may be injected  
10 directly into the corneal stroma by an ophthalmologist under microscopic guidance. The preferred site of injection may vary with the morphology of the individual lesion, but the goal of the administration would be to place the composition at the advancing front of the vasculature (i.e., interspersed between the blood vessels and the normal cornea). In most cases this would involve perilimbic corneal injection to "protect" the cornea from the  
15 advancing blood vessels. This method may also be utilized shortly after a corneal insult in order to prophylactically prevent corneal neovascularization. In this situation the material could be injected in the perilimbic cornea interspersed between the corneal lesion and its undesired potential limbic blood supply. Such methods may also be utilized in a similar fashion to prevent capillary invasion of transplanted corneas. In a sustained-release form  
20 injections might only be required 2-3 times per year. A steroid could also be added to the injection solution to reduce inflammation resulting from the injection itself.

Within another aspect of the present invention, methods are provided for treating neovascular glaucoma, comprising the step of administering to a patient a therapeutically effective amount of an albumin fusion protein of the invention and/or polynucleotides  
25 encoding an albumin fusion protein of the invention to the eye, such that the formation of blood vessels is inhibited. In one embodiment, the compound may be administered topically to the eye in order to treat early forms of neovascular glaucoma. Within other embodiments, the compound may be implanted by injection into the region of the anterior chamber angle. Within other embodiments, the compound may also be placed in any  
30 location such that the compound is continuously released into the aqueous humor. Within another aspect of the present invention, methods are provided for treating proliferative diabetic retinopathy, comprising the step of administering to a patient a therapeutically

effective amount of an albumin fusion protein of the invention and/or polynucleotides encoding an albumin fusion protein of the invention to the eyes, such that the formation of blood vessels is inhibited.

5 Within particularly preferred embodiments of the invention, proliferative diabetic retinopathy may be treated by injection into the aqueous humor or the vitreous, in order to increase the local concentration of the polynucleotide, polypeptide, antagonist and/or agonist in the retina. Preferably, this treatment should be initiated prior to the acquisition of severe disease requiring photocoagulation.

10 Within another aspect of the present invention, methods are provided for treating retrolental fibroplasia, comprising the step of administering to a patient a therapeutically effective amount of an albumin fusion protein of the invention and/or polynucleotides encoding an albumin fusion protein of the invention to the eye, such that the formation of blood vessels is inhibited. The compound may be administered topically, via intravitreal injection and/or via intraocular implants.

15 Additionally, disorders which can be treated with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, hemangioma, arthritis, psoriasis, angiofibroma, atherosclerotic plaques, delayed wound healing, granulations, hemophilic joints, hypertrophic scars, nonunion fractures, Osler-Weber syndrome, pyogenic granuloma, scleroderma, trachoma, and  
20 vascular adhesions.

Moreover, disorders and/or states, which can be treated, prevented, diagnosed, and/or prognosed with the the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention of the invention include, but are not limited to, solid tumors, blood born tumors such as leukemias, tumor  
25 metastasis, Kaposi's sarcoma, benign tumors, for example hemangiomas, acoustic neuromas, neurofibromas, trachomas, and pyogenic granulomas, rheumatoid arthritis, psoriasis, ocular angiogenic diseases, for example, diabetic retinopathy, retinopathy of prematurity, macular degeneration, corneal graft rejection, neovascular glaucoma, retrolental fibroplasia, rubeosis, retinoblastoma, and uveitis, delayed wound healing,  
30 endometriosis, vasculogenesis, granulations, hypertrophic scars (keloids), nonunion fractures, scleroderma, trachoma, vascular adhesions, myocardial angiogenesis, coronary collaterals, cerebral collaterals, arteriovenous malformations, ischemic limb angiogenesis,

Osler-Webber Syndrome, plaque neovascularization, telangiectasia, hemophiliac joints, angiofibroma fibromuscular dysplasia, wound granulation, Crohn's disease, atherosclerosis, birth control agent by preventing vascularization required for embryo implantation controlling menstruation, diseases that have angiogenesis as a pathologic  
5 consequence such as cat scratch disease (Rochele minalia quintosa), ulcers (Helicobacter pylori), Bartonellosis and bacillary angiomatosis.

In one aspect of the birth control method, an amount of the compound sufficient to block embryo implantation is administered before or after intercourse and fertilization have occurred, thus providing an effective method of birth control, possibly a "morning  
10 after" method. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may also be used in controlling menstruation or administered as either a peritoneal lavage fluid or for peritoneal implantation in the treatment of endometriosis.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin  
15 fusion proteins of the invention may be incorporated into surgical sutures in order to prevent stitch granulomas.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be utilized in a wide variety of surgical procedures. For example, within one aspect of the present invention a compositions (in the form of, for  
20 example, a spray or film) may be utilized to coat or spray an area prior to removal of a tumor, in order to isolate normal surrounding tissues from malignant tissue, and/or to prevent the spread of disease to surrounding tissues. Within other aspects of the present invention, compositions (e.g., in the form of a spray) may be delivered via endoscopic procedures in order to coat tumors, or inhibit angiogenesis in a desired locale. Within yet  
25 other aspects of the present invention, surgical meshes which have been coated with anti-angiogenic compositions of the present invention may be utilized in any procedure wherein a surgical mesh might be utilized. For example, within one embodiment of the invention a surgical mesh laden with an anti-angiogenic composition may be utilized during abdominal cancer resection surgery (e.g., subsequent to colon resection) in order to  
30 provide support to the structure, and to release an amount of the anti-angiogenic factor.

Within further aspects of the present invention, methods are provided for treating tumor excision sites, comprising administering albumin fusion proteins of the invention



and/or polynucleotides encoding albumin fusion proteins of the invention to the resection margins of a tumor subsequent to excision, such that the local recurrence of cancer and the formation of new blood vessels at the site is inhibited. Within one embodiment of the invention, the anti-angiogenic compound is administered directly to the tumor excision site (e.g., applied by swabbing, brushing or otherwise coating the resection margins of the tumor with the anti-angiogenic compound). Alternatively, the anti-angiogenic compounds may be incorporated into known surgical pastes prior to administration. Within particularly preferred embodiments of the invention, the anti-angiogenic compounds are applied after hepatic resections for malignancy, and after neurosurgical operations.

Within one aspect of the present invention, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be administered to the resection margin of a wide variety of tumors, including for example, breast, colon, brain and hepatic tumors. For example, within one embodiment of the invention, anti-angiogenic compounds may be administered to the site of a neurological tumor subsequent to excision, such that the formation of new blood vessels at the site are inhibited.

The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may also be administered along with other anti-angiogenic factors. Representative examples of other anti-angiogenic factors include: Anti-Invasive Factor, retinoic acid and derivatives thereof, paclitaxel, Suramin, Tissue Inhibitor of Metalloproteinase-1, Tissue Inhibitor of Metalloproteinase-2, Plasminogen Activator Inhibitor-1, Plasminogen Activator Inhibitor-2, and various forms of the lighter "d group" transition metals.

Lighter "d group" transition metals include, for example, vanadium, molybdenum, tungsten, titanium, niobium, and tantalum species. Such transition metal species may form transition metal complexes. Suitable complexes of the above-mentioned transition metal species include oxo transition metal complexes.

Representative examples of vanadium complexes include oxo vanadium complexes such as vanadate and vanadyl complexes. Suitable vanadate complexes include metavanadate and orthovanadate complexes such as, for example, ammonium metavanadate, sodium metavanadate, and sodium orthovanadate. Suitable vanadyl complexes include, for example, vanadyl acetylacetonate and vanadyl sulfate including vanadyl sulfate hydrates such as vanadyl sulfate mono- and trihydrates.

Representative examples of tungsten and molybdenum complexes also include oxo complexes. Suitable oxo tungsten complexes include tungstate and tungsten oxide complexes. Suitable tungstate complexes include ammonium tungstate, calcium tungstate, sodium tungstate dihydrate, and tungstic acid. Suitable tungsten oxides include tungsten (IV) oxide and tungsten (VI) oxide. Suitable oxo molybdenum complexes include molybdate, molybdenum oxide, and molybdenyl complexes. Suitable molybdate complexes include ammonium molybdate and its hydrates, sodium molybdate and its hydrates, and potassium molybdate and its hydrates. Suitable molybdenum oxides include molybdenum (VI) oxide, molybdenum (VI) oxide, and molybdic acid. Suitable molybdenyl complexes include, for example, molybdenyl acetylacetonate. Other suitable tungsten and molybdenum complexes include hydroxo derivatives derived from, for example, glycerol, tartaric acid, and sugars.

A wide variety of other anti-angiogenic factors may also be utilized within the context of the present invention. Representative examples include platelet factor 4; protamine sulphate; sulphated chitin derivatives (prepared from queen crab shells), (Murata et al., Cancer Res. 51:22-26, 1991); Sulphated Polysaccharide Peptidoglycan Complex (SP- PG) (the function of this compound may be enhanced by the presence of steroids such as estrogen, and tamoxifen citrate); Staurosporine; modulators of matrix metabolism, including for example, proline analogs, cishydroxyproline, d,L-3,4-dehydroproline, Thiaproline, alpha,alpha-dipyridyl, aminopropionitrile fumarate; 4-propyl-5-(4-pyridinyl)-2(3H)-oxazolone; Methotrexate; Mitoxantrone; Heparin; Interferons; 2 Macroglobulin-serum; ChIMP-3 (Pavloff et al., J. Bio. Chem. 267:17321-17326, (1992)); Chymostatin (Tomkinson et al., Biochem J. 286:475-480, (1992)); Cyclodextrin Tetradecasulfate; Eponemycin; Camptothecin; Fumagillin (Ingber et al., Nature 348:555-557, 1990); Gold Sodium Thiomalate ("GST"; Matsubara and Ziff, J. Clin. Invest. 79:1440-1446, (1987)); anticollagenase-serum; alpha2-antiplasmin (Holmes et al., J. Biol. Chem. 262(4):1659-1664, (1987)); Bisantrone (National Cancer Institute); Lobenzarit disodium (N-(2)-carboxyphenyl-4- chloroanthronilic acid disodium or "CCA"; Takeuchi et al., Agents Actions 36:312-316, (1992)); Thalidomide; Angostatic steroid; AGM-1470; carboxyaminolimidazole; and metalloproteinase inhibitors such as BB94.

**Diseases at the Cellular Level**

Diseases associated with increased cell survival or the inhibition of apoptosis that could be treated, prevented, diagnosed, and/or prognosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include cancers (such as follicular lymphomas, carcinomas with p53 mutations, and hormone-dependent tumors, including, but not limited to colon cancer, cardiac tumors, pancreatic cancer, melanoma, retinoblastoma, glioblastoma, lung cancer, intestinal cancer, testicular cancer, stomach cancer, neuroblastoma, myxoma, myoma, lymphoma, endothelioma, osteoblastoma, osteoclastoma, osteosarcoma, chondrosarcoma, adenoma, breast cancer, prostate cancer, Kaposi's sarcoma and ovarian cancer); autoimmune disorders (such as, multiple sclerosis, Sjogren's syndrome, Hashimoto's thyroiditis, biliary cirrhosis, Behcet's disease, Crohn's disease, polymyositis, systemic lupus erythematosus and immune-related glomerulonephritis and rheumatoid arthritis) and viral infections (such as herpes viruses, pox viruses and adenoviruses), inflammation, graft v. host disease, acute graft rejection, and chronic graft rejection.

In preferred embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to inhibit growth, progression, and/or metastasis of cancers, in particular those listed above.

Additional diseases or conditions associated with increased cell survival that could be treated or detected by fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, but are not limited to, progression, and/or metastases of malignancies and related disorders such as leukemia (including acute leukemias (e.g., acute lymphocytic leukemia, acute myelocytic leukemia (including myeloblastic, promyelocytic, myelomonocytic, monocytic, and erythroleukemia)) and chronic leukemias (e.g., chronic myelocytic (granulocytic) leukemia and chronic lymphocytic leukemia)), polycythemia vera, lymphomas (e.g., Hodgkin's disease and non-Hodgkin's disease), multiple myeloma, Waldenstrom's macroglobulinemia, heavy chain disease, and solid tumors including, but not limited to, sarcomas and carcinomas such as fibrosarcoma, myxosarcoma, liposarcoma, chondrosarcoma, osteogenic sarcoma, chordoma, angiosarcoma, endotheliosarcoma, lymphangiosarcoma, lymphangioendotheliosarcoma, synovioma, mesothelioma, Ewing's tumor, leiomyosarcoma, rhabdomyosarcoma, colon carcinoma, pancreatic cancer, breast cancer,

ovarian cancer, prostate cancer, squamous cell carcinoma, basal cell carcinoma, adenocarcinoma, sweat gland carcinoma, sebaceous gland carcinoma, papillary carcinoma, papillary adenocarcinomas, cystadenocarcinoma, medullary carcinoma, bronchogenic carcinoma, renal cell carcinoma, hepatoma, bile duct carcinoma, choriocarcinoma, seminoma, embryonal carcinoma, Wilm's tumor, cervical cancer, testicular tumor, lung carcinoma, small cell lung carcinoma, bladder carcinoma, epithelial carcinoma, glioma, astrocytoma, medulloblastoma, craniopharyngioma, ependymoma, pinealoma, hemangioblastoma, acoustic neuroma, oligodendroglioma, menangioma, melanoma, neuroblastoma, and retinoblastoma.

Diseases associated with increased apoptosis that could be treated, prevented, diagnosed, and/or prognosed using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, include, but are not limited to, AIDS; neurodegenerative disorders (such as Alzheimer's disease, Parkinson's disease, Amyotrophic lateral sclerosis, Retinitis pigmentosa, Cerebellar degeneration and brain tumor or prior associated disease); autoimmune disorders (such as, multiple sclerosis, Sjogren's syndrome, Hashimoto's thyroiditis, biliary cirrhosis, Behcet's disease, Crohn's disease, polymyositis, systemic lupus erythematosus and immune-related glomerulonephritis and rheumatoid arthritis) myelodysplastic syndromes (such as aplastic anemia), graft v. host disease, ischemic injury (such as that caused by myocardial infarction, stroke and reperfusion injury), liver injury (e.g., hepatitis related liver injury, ischemia/reperfusion injury, cholestosis (bile duct injury) and liver cancer); toxin-induced liver disease (such as that caused by alcohol), septic shock, cachexia and anorexia.

#### **Wound Healing and Epithelial Cell Proliferation**

In accordance with yet a further aspect of the present invention, there is provided a

eye tissue wounds, dental tissue wounds, oral cavity wounds, diabetic ulcers, dermal ulcers, cubitus ulcers, arterial ulcers, venous stasis ulcers, burns resulting from heat exposure or chemicals, and other abnormal wound healing conditions such as uremia, malnutrition, vitamin deficiencies and complications associated with systemic treatment with steroids, radiation therapy and antineoplastic drugs and antimetabolites. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to promote dermal reestablishment subsequent to dermal loss

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to increase the adherence of skin grafts to a wound bed and to stimulate re-epithelialization from the wound bed. The following are types of grafts that fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to increase adherence to a wound bed: autografts, artificial skin, allografts, autodermic graft, autoepdermic grafts, avacular grafts, Blair-Brown grafts, bone graft, brephoplastic grafts, cutis graft, delayed graft, dermic graft, epidermic graft, fascia graft, full thickness graft, heterologous graft, xenograft, homologous graft, hyperplastic graft, lamellar graft, mesh graft, mucosal graft, Ollier-Thiersch graft, omenpal graft, patch graft, pedicle graft, penetrating graft, split skin graft, thick split graft. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, can be used to promote skin strength and to improve the appearance of aged skin.

It is believed that fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, will also produce changes in hepatocyte proliferation, and epithelial cell proliferation in the lung, breast, pancreas, stomach, small intestine, and large intestine. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could promote proliferation of epithelial cells such as sebocytes, hair follicles, hepatocytes, type II pneumocytes, mucin-producing goblet cells, and other epithelial cells and their progenitors contained within the skin, lung, liver, and gastrointestinal tract. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may promote proliferation of endothelial cells, keratinocytes, and basal keratinocytes.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin

fusion proteins of the invention, could also be used to reduce the side effects of gut toxicity that result from radiation, chemotherapy treatments or viral infections. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may have a cytoprotective effect on the small intestine mucosa. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may also stimulate healing of mucositis (mouth ulcers) that result from chemotherapy and viral infections.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could further be used in full regeneration of skin in full and partial thickness skin defects, including burns, (i.e., repopulation of hair follicles, sweat glands, and sebaceous glands), treatment of other skin defects such as psoriasis. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to treat epidermolysis bullosa, a defect in adherence of the epidermis to the underlying dermis which results in frequent, open and painful blisters by accelerating reepithelialization of these lesions. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could also be used to treat gastric and duodenal ulcers and help heal by scar formation of the mucosal lining and regeneration of glandular mucosa and duodenal mucosal lining more rapidly. Inflammatory bowel diseases, such as Crohn's disease and ulcerative colitis, are diseases which result in destruction of the mucosal surface of the small or large intestine, respectively. Thus, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to promote the resurfacing of the mucosal surface to aid more rapid healing and to prevent progression of inflammatory bowel disease. Treatment with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, is expected to have a significant effect on the production of mucus throughout the gastrointestinal tract and could be used to protect the intestinal mucosa from injurious substances that are ingested or following surgery. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to treat diseases associated with the under expression.

Moreover, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to prevent and heal damage to the

lungs due to various pathological states. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, which could stimulate proliferation and differentiation and promote the repair of alveoli and bronchiolar epithelium to prevent or treat acute or chronic lung damage. For example, emphysema, which results in the progressive loss of aveoli, and inhalation injuries, i.e., resulting from smoke inhalation and burns, that cause necrosis of the bronchiolar epithelium and alveoli could be effectively treated using polynucleotides or polypeptides, agonists or antagonists of the present invention. Also fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to stimulate the proliferation of and differentiation of type II pneumocytes, which may help treat or prevent disease such as hyaline membrane diseases, such as infant respiratory distress syndrome and bronchopulmonary dysplasia, in premature infants.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could stimulate the proliferation and differentiation of hepatocytes and, thus, could be used to alleviate or treat liver diseases and pathologies such as fulminant liver failure caused by cirrhosis, liver damage caused by viral hepatitis and toxic substances (i.e., acetaminophen, carbon tetrachloride and other hepatotoxins known in the art).

In addition, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used treat or prevent the onset of diabetes mellitus. In patients with newly diagnosed Types I and II diabetes, where some islet cell function remains, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used to maintain the islet function so as to alleviate, delay or prevent permanent manifestation of the disease. Also, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, could be used as an auxiliary in islet cell transplantation to improve or promote islet cell function.

#### **Neural Activity and Neurological Diseases**

The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used for the diagnosis and/or treatment of diseases, disorders, damage or injury of the brain and/or nervous system. Nervous system

disorders that can be treated with the compositions of the invention (e.g., fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention), include, but are not limited to, nervous system injuries, and diseases or disorders which result in either a disconnection of axons, a diminution or degeneration of neurons, or demyelination. Nervous system lesions which may be treated in a patient (including human and non-human mammalian patients) according to the methods of the invention, include but are not limited to, the following lesions of either the central (including spinal cord, brain) or peripheral nervous systems: (1) ischemic lesions, in which a lack of oxygen in a portion of the nervous system results in neuronal injury or death, including cerebral infarction or ischemia, or spinal cord infarction or ischemia; (2) traumatic lesions, including lesions caused by physical injury or associated with surgery, for example, lesions which sever a portion of the nervous system, or compression injuries; (3) malignant lesions, in which a portion of the nervous system is destroyed or injured by malignant tissue which is either a nervous system associated malignancy or a malignancy derived from non-nervous system tissue; (4) infectious lesions, in which a portion of the nervous system is destroyed or injured as a result of infection, for example, by an abscess or associated with infection by human immunodeficiency virus, herpes zoster, or herpes simplex virus or with Lyme disease, tuberculosis, or syphilis; (5) degenerative lesions, in which a portion of the nervous system is destroyed or injured as a result of a degenerative process including but not limited to, degeneration associated with Parkinson's disease, Alzheimer's disease, Huntington's chorea, or amyotrophic lateral sclerosis (ALS); (6) lesions associated with nutritional diseases or disorders, in which a portion of the nervous system is destroyed or injured by a nutritional disorder or disorder of metabolism including, but not limited to, vitamin B12 deficiency, folic acid deficiency, Wernicke disease, tobacco-alcohol amblyopia, Marchiafava-Bignami disease (primary degeneration of the corpus callosum), and alcoholic cerebellar degeneration; (7) neurological lesions associated with systemic diseases including, but not limited to, diabetes (diabetic neuropathy, Bell's palsy), systemic lupus erythematosus, carcinoma, or sarcoidosis; (8) lesions caused by toxic substances including alcohol, lead, or particular neurotoxins; and (9) demyelinated lesions in which a portion of the nervous system is destroyed or injured by a demyelinating disease including, but not limited to, multiple sclerosis, human immunodeficiency virus-associated myelopathy, transverse myelopathy or various



etiologies, progressive multifocal leukoencephalopathy, and central pontine myelinolysis.

In one embodiment, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to protect neural cells from the damaging effects of hypoxia. In a further preferred embodiment, the  
5 albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to protect neural cells from the damaging effects of cerebral hypoxia. According to this embodiment, the compositions of the invention are used to treat or prevent neural cell injury associated with cerebral hypoxia. In one non-exclusive aspect of this embodiment, the albumin fusion proteins of the invention and/or  
10 polynucleotides encoding albumin fusion proteins of the invention, are used to treat or prevent neural cell injury associated with cerebral ischemia. In another non-exclusive aspect of this embodiment, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat or prevent neural cell injury associated with cerebral infarction.

15 In another preferred embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat or prevent neural cell injury associated with a stroke. In a specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat or prevent cerebral neural cell injury associated with a  
20 stroke.

In another preferred embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat or prevent neural cell injury associated with a heart attack. In a specific embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins  
25 of the invention are used to treat or prevent cerebral neural cell injury associated with a heart attack.

The compositions of the invention which are useful for treating or preventing a nervous system disorder may be selected by testing for biological activity in promoting the survival or differentiation of neurons. For example, and not by way of limitation,  
30 compositions of the invention which elicit any of the following effects may be useful according to the invention: (1) increased survival time of neurons in culture either in the presence or absence of hypoxia or hypoxic conditions; (2) increased sprouting of neurons

in culture or *in vivo*; (3) increased production of a neuron-associated molecule in culture or *in vivo*, e.g., choline acetyltransferase or acetylcholinesterase with respect to motor neurons; or (4) decreased symptoms of neuron dysfunction *in vivo*. Such effects may be measured by any method known in the art. In preferred, non-limiting embodiments, increased survival of neurons may routinely be measured using a method set forth herein or otherwise known in the art, such as, for example, in Zhang *et al.*, *Proc Natl Acad Sci USA* 97:3637-42 (2000) or in Arakawa *et al.*, *J. Neurosci.*, 10:3507-15 (1990); increased sprouting of neurons may be detected by methods known in the art, such as, for example, the methods set forth in Pestronk *et al.*, *Exp. Neurol.*, 70:65-82 (1980), or Brown *et al.*, *Ann. Rev. Neurosci.*, 4:17-42 (1981); increased production of neuron-associated molecules may be measured by bioassay, enzymatic assay, antibody binding, Northern blot assay, etc., using techniques known in the art and depending on the molecule to be measured; and motor neuron dysfunction may be measured by assessing the physical manifestation of motor neuron disorder, e.g., weakness, motor neuron conduction velocity, or functional disability.

In specific embodiments, motor neuron disorders that may be treated according to the invention include, but are not limited to, disorders such as infarction, infection, exposure to toxin, trauma, surgical damage, degenerative disease or malignancy that may affect motor neurons as well as other components of the nervous system, as well as disorders that selectively affect neurons such as amyotrophic lateral sclerosis, and including, but not limited to, progressive spinal muscular atrophy, progressive bulbar palsy, primary lateral sclerosis, infantile and juvenile muscular atrophy, progressive bulbar paralysis of childhood (Fazio-Londe syndrome), poliomyelitis and the post polio syndrome, and Hereditary Motorsensory Neuropathy (Charcot-Marie-Tooth Disease).

Further, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may play a role in neuronal survival; synapse formation; conductance; neural differentiation, etc. Thus, compositions of the invention (including fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention) may be used to diagnose and/or treat or prevent diseases or disorders associated with these roles, including, but not limited to, learning and/or cognition disorders. The compositions of the invention may also be useful in the treatment or prevention of neurodegenerative disease states and/or behavioural disorders. Such

neurodegenerative disease states and/or behavioral disorders include, but are not limited to, Alzheimer's Disease, Parkinson's Disease, Huntington's Disease, Tourette Syndrome, schizophrenia, mania, dementia, paranoia, obsessive compulsive disorder, panic disorder, learning disabilities, ALS, psychoses, autism, and altered behaviors, including disorders in  
5 feeding, sleep patterns, balance, and perception. In addition, compositions of the invention may also play a role in the treatment, prevention and/or detection of developmental disorders associated with the developing embryo, or sexually-linked disorders.

Additionally, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may be useful in protecting neural cells from  
10 diseases, damage, disorders, or injury, associated with cerebrovascular disorders including, but not limited to, carotid artery diseases (e.g., carotid artery thrombosis, carotid stenosis, or Moyamoya Disease), cerebral amyloid angiopathy, cerebral aneurysm, cerebral anoxia, cerebral arteriosclerosis, cerebral arteriovenous malformations, cerebral artery diseases, cerebral embolism and thrombosis (e.g., carotid artery thrombosis, sinus thrombosis, or  
15 Wallenberg's Syndrome), cerebral hemorrhage (e.g., epidural or subdural hematoma, or subarachnoid hemorrhage), cerebral infarction, cerebral ischemia (e.g., transient cerebral ischemia, Subclavian Steal Syndrome, or vertebrobasilar insufficiency), vascular dementia (e.g., multi-infarct), leukomalacia, periventricular, and vascular headache (e.g., cluster headache or migraines).

In accordance with yet a further aspect of the present invention, there is provided a  
20 process for utilizing fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, for therapeutic purposes, for example, to stimulate neurological cell proliferation and/or differentiation. Therefore, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention  
25 may be used to treat and/or detect neurologic diseases. Moreover, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, can be used as a marker or detector of a particular nervous system disease or disorder.

Examples of neurologic diseases which can be treated or detected with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the  
30 invention include, brain diseases, such as metabolic brain diseases which includes phenylketonuria such as maternal phenylketonuria, pyruvate carboxylase deficiency, pyruvate dehydrogenase complex deficiency, Wernicke's Encephalopathy, brain edema,

brain neoplasms such as cerebellar neoplasms which include infratentorial neoplasms, cerebral ventricle neoplasms such as choroid plexus neoplasms, hypothalamic neoplasms, supratentorial neoplasms, canavan disease, cerebellar diseases such as cerebellar ataxia which include spinocerebellar degeneration such as ataxia telangiectasia, cerebellar  
5 dyssynergia, Friederich's Ataxia, Machado-Joseph Disease, olivopontocerebellar atrophy, cerebellar neoplasms such as infratentorial neoplasms, diffuse cerebral sclerosis such as encephalitis periaxialis, globoid cell leukodystrophy, metachromatic leukodystrophy and subacute sclerosing panencephalitis.

Additional neurologic diseases which can be treated or detected with fusion  
10 proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include cerebrovascular disorders (such as carotid artery diseases which include carotid artery thrombosis, carotid stenosis and Moyamoya Disease), cerebral amyloid angiopathy, cerebral aneurysm, cerebral anoxia, cerebral arteriosclerosis, cerebral arteriovenous malformations, cerebral artery diseases, cerebral embolism and thrombosis  
15 such as carotid artery thrombosis, sinus thrombosis and Wallenberg's Syndrome, cerebral hemorrhage such as epidural hematoma, subdural hematoma and subarachnoid hemorrhage, cerebral infarction, cerebral ischemia such as transient cerebral ischemia, Subclavian Steal Syndrome and vertebrobasilar insufficiency, vascular dementia such as multi-infarct dementia, periventricular leukomalacia, vascular headache such as cluster  
20 headache and migraine.

Additional neurologic diseases which can be treated or detected with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include dementia such as AIDS Dementia Complex, presenile dementia such as  
25 Alzheimer's Disease and Creutzfeldt-Jakob Syndrome, senile dementia such as Alzheimer's Disease and progressive supranuclear palsy, vascular dementia such as multi-infarct dementia, encephalitis which include encephalitis periaxialis, viral encephalitis such as epidemic encephalitis, Japanese Encephalitis, St. Louis Encephalitis, tick-borne encephalitis and West Nile Fever, acute disseminated encephalomyelitis, meningoencephalitis such as uveomeningoencephalitic syndrome, Postencephalitic  
30 Parkinson Disease and subacute sclerosing panencephalitis, encephalomalacia such as periventricular leukomalacia, epilepsy such as generalized epilepsy which includes infantile spasms, absence epilepsy, myoclonic epilepsy which includes MERRF

Syndrome, tonic-clonic epilepsy, partial epilepsy such as complex partial epilepsy, frontal lobe epilepsy and temporal lobe epilepsy, post-traumatic epilepsy, status epilepticus such as Epilepsia Partialis Continua, and Hallervorden-Spatz Syndrome.

Additional neurologic diseases which can be treated or detected with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include hydrocephalus such as Dandy-Walker Syndrome and normal pressure hydrocephalus, hypothalamic diseases such as hypothalamic neoplasms, cerebral malaria, narcolepsy which includes cataplexy, bulbar poliomyelitis, cerebri pseudotumor, Rett Syndrome, Reye's Syndrome, thalamic diseases, cerebral toxoplasmosis, intracranial tuberculoma and Zellweger Syndrome, central nervous system infections such as AIDS Dementia Complex, Brain Abscess, subdural empyema, encephalomyelitis such as Equine Encephalomyelitis, Venezuelan Equine Encephalomyelitis, Necrotizing Hemorrhagic Encephalomyelitis, Visna, and cerebral malaria.

Additional neurologic diseases which can be treated or detected with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include meningitis such as arachnoiditis, aseptic meningitis such as viral meningitis which includes lymphocytic choriomeningitis, Bacterial meningitis which includes Haemophilus Meningitis, Listeria Meningitis, Meningococcal Meningitis such as Waterhouse-Friderichsen Syndrome, Pneumococcal Meningitis and meningeal tuberculosis, fungal meningitis such as Cryptococcal Meningitis, subdural effusion, meningoencephalitis such as uvemeningoencephalitic syndrome, myelitis such as transverse myelitis, neurosyphilis such as tabes dorsalis, poliomyelitis which includes bulbar poliomyelitis and postpoliomyelitis syndrome, prion diseases (such as Creutzfeldt-Jakob Syndrome, Bovine Spongiform Encephalopathy, Gerstmann-Straussler Syndrome, Kuru, Scrapie), and cerebral toxoplasmosis.

Additional neurologic diseases which can be treated or detected with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include central nervous system neoplasms such as brain neoplasms that include cerebellar neoplasms such as infratentorial neoplasms, cerebral ventricle neoplasms such as choroid plexus neoplasms, hypothalamic neoplasms and supratentorial neoplasms, meningeal neoplasms, spinal cord neoplasms which include epidural neoplasms, demyelinating diseases such as Canavan Diseases, diffuse cerebral scleritis which includes

adrenoleukodystrophy, encephalitis periaxialis, globoid cell leukodystrophy, diffuse cerebral sclerosis such as metachromatic leukodystrophy, allergic encephalomyelitis, necrotizing hemorrhagic encephalomyelitis, progressive multifocal leukoencephalopathy, multiple sclerosis, central pontine myelinolysis, transverse myelitis, neuromyelitis optica, Scrapie, Swayback, Chronic Fatigue Syndrome, Visna, High Pressure Nervous Syndrome, Meningism, spinal cord diseases such as amyotonia congenita, amyotrophic lateral sclerosis, spinal muscular atrophy such as Werdnig-Hoffmann Disease, spinal cord compression, spinal cord neoplasms such as epidural neoplasms, syringomyelia, Tabes Dorsalis, Stiff-Man Syndrome, mental retardation such as Angelman Syndrome, Cri-du-Chat Syndrome, De Lange's Syndrome, Down Syndrome, Gangliosidoses such as gangliosidoses G(M1), Sandhoff Disease, Tay-Sachs Disease, Hartnup Disease, homocystinuria, Laurence-Moon-Biedl Syndrome, Lesch-Nyhan Syndrome, Maple Syrup Urine Disease, mucopolipidosis such as fucosidosis, neuronal ceroid-lipofuscinosis, oculocerebrorenal syndrome, phenylketonuria such as maternal phenylketonuria, Prader-Willi Syndrome, Rett Syndrome, Rubinstein-Taybi Syndrome, Tuberous Sclerosis, WAGR Syndrome, nervous system abnormalities such as holoprosencephaly, neural tube defects such as anencephaly which includes hydrangencephaly, Arnold-Chairi Deformity, encephalocele, meningocele, meningomyelocele, spinal dysraphism such as spina bifida cystica and spina bifida occulta.

Additional neurologic diseases which can be treated or detected with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include hereditary motor and sensory neuropathies which include Charcot-Marie Disease, Hereditary optic atrophy, Refsum's Disease, hereditary spastic paraplegia, Werdnig-Hoffmann Disease, Hereditary Sensory and Autonomic Neuropathies such as Congenital Analgesia and Familial Dysautonomia, Neurologic manifestations (such as agnosia that include Gerstmann's Syndrome, Amnesia such as retrograde amnesia, apraxia, neurogenic bladder, cataplexy, communicative disorders such as hearing disorders that includes deafness, partial hearing loss, loudness recruitment and tinnitus, language disorders such as aphasia which include agraphia, anomia, broca aphasia, and Wernicke Aphasia, Dyslexia such as Acquired Dyslexia, language development disorders, speech disorders such as aphasia which includes anomia, broca aphasia and Wernicke Aphasia, articulation disorders, communicative disorders such as speech disorders which include

dysarthria, echolalia, mutism and stuttering, voice disorders such as aphonia and hoarseness, decerebrate state, delirium, fasciculation, hallucinations, meningism, movement disorders such as angelman syndrome, ataxia, athetosis, chorea, dystonia, hypokinesia, muscle hypotonia, myoclonus, tic, torticollis and tremor, muscle hypertonia

5 such as muscle rigidity such as stiff-man syndrome, muscle spasticity, paralysis such as facial paralysis which includes Herpes Zoster Oticus, Gastroparesis, Hemiplegia, ophthalmoplegia such as diplopia, Duane's Syndrome, Horner's Syndrome, Chronic progressive external ophthalmoplegia such as Kearns Syndrome, Bulbar Paralysis, Tropical Spastic Paraparesis, Paraplegia such as Brown-Sequard Syndrome, quadriplegia,

10 respiratory paralysis and vocal cord paralysis, paresis, phantom limb, taste disorders such as ageusia and dysgeusia, vision disorders such as amblyopia, blindness, color vision defects, diplopia, hemianopsia, scotoma and subnormal vision, sleep disorders such as hypersomnia which includes Kleine-Levin Syndrome, insomnia, and somnambulism, spasm such as trismus, unconsciousness such as coma, persistent vegetative state and

15 syncope and vertigo, neuromuscular diseases such as amyotonia congenita, amyotrophic lateral sclerosis, Lambert-Eaton Myasthenic Syndrome, motor neuron disease, muscular atrophy such as spinal muscular atrophy, Charcot-Marie Disease and Werdnig-Hoffmann Disease, Postpoliomyelitis Syndrome, Muscular Dystrophy, Myasthenia Gravis, Myotonia Atrophica, Myotonia Confenita, Nemaline Myopathy, Familial Periodic Paralysis,

20 Multiplex Paramyoclonus, Tropical Spastic Paraparesis and Stiff-Man Syndrome, peripheral nervous system diseases such as acrodynia, amyloid neuropathies, autonomic nervous system diseases such as Adie's Syndrome, Barre-Lieou Syndrome, Familial Dysautonomia, Horner's Syndrome, Reflex Sympathetic Dystrophy and Shy-Drager Syndrome, Cranial Nerve Diseases such as Acoustic Nerve Diseases such as Acoustic

25 Neuroma which includes Neurofibromatosis 2, Facial Nerve Diseases such as Facial Neuralgia, Melkersson-Rosenthal Syndrome, ocular motility disorders which includes amblyopia, nystagmus, oculomotor nerve paralysis, ophthalmoplegia such as Duane's Syndrome, Horner's Syndrome, Chronic Progressive External Ophthalmoplegia which includes Kearns Syndrome, Strabismus such as Esotropia and Exotropia, Oculomotor

30 Nerve Paralysis, Optic Nerve Diseases such as Optic Atrophy which includes Hereditary Optic Atrophy, Optic Disk Drusen, Optic Neuritis such as Neuromyelitis Optica, Papilledema, Trigeminal Neuralgia, Vocal Cord Paralysis, Demyelinating Diseases such as

Neuromyelitis Optica and Swayback, and Diabetic neuropathies such as diabetic foot.

Additional neurologic diseases which can be treated or detected with fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include nerve compression syndromes such as carpal tunnel syndrome, tarsal  
5 tunnel syndrome, thoracic outlet syndrome such as cervical rib syndrome, ulnar nerve compression syndrome, neuralgia such as causalgia, cervico-brachial neuralgia, facial neuralgia and trigeminal neuralgia, neuritis such as experimental allergic neuritis, optic neuritis, polyneuritis, polyradiculoneuritis and radiculities such as polyradiculitis, hereditary motor and sensory neuropathies such as Charcot-Marie Disease, Hereditary  
10 Optic Atrophy, Refsum's Disease, Hereditary Spastic Paraplegia and Werdnig-Hoffmann Disease, Hereditary Sensory and Autonomic Neuropathies which include Congenital Analgesia and Familial Dysautonomia, POEMS Syndrome, Sciatica, Gustatory Sweating and Tetany).

### Endocrine Disorders

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may be used to treat, prevent, diagnose, and/or prognose disorders and/or diseases related to hormone imbalance, and/or disorders or diseases of the  
20 endocrine system.

Hormones secreted by the glands of the endocrine system control physical growth, sexual function, metabolism, and other functions. Disorders may be classified in two ways: disturbances in the production of hormones, and the inability of tissues to respond to hormones. The etiology of these hormone imbalance or endocrine system diseases,  
25 disorders or conditions may be genetic, somatic, such as cancer and some autoimmune diseases, acquired (e.g., by chemotherapy, injury or toxins), or infectious. Moreover, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention can be used as a marker or detector of a particular disease or disorder related to the endocrine system and/or hormone imbalance.

30 Endocrine system and/or hormone imbalance and/or diseases encompass disorders of uterine motility including, but not limited to: complications with pregnancy and labor (e.g., pre-term labor, post-term pregnancy, spontaneous abortion, and slow or stopped



labor); and disorders and/or diseases of the menstrual cycle (e.g., dysmenorrhea and endometriosis).

Endocrine system and/or hormone imbalance disorders and/or diseases include disorders and/or diseases of the pancreas, such as, for example, diabetes mellitus, diabetes insipidus, congenital pancreatic agenesis, pheochromocytoma--islet cell tumor syndrome; disorders and/or diseases of the adrenal glands such as, for example, Addison's Disease, corticosteroid deficiency, virilizing disease, hirsutism, Cushing's Syndrome, hyperaldosteronism, pheochromocytoma; disorders and/or diseases of the pituitary gland, such as, for example, hyperpituitarism, hypopituitarism, pituitary dwarfism, pituitary adenoma, panhypopituitarism, acromegaly, gigantism; disorders and/or diseases of the thyroid, including but not limited to, hyperthyroidism, hypothyroidism, Plummer's disease, Graves' disease (toxic diffuse goiter), toxic nodular goiter, thyroiditis (Hashimoto's thyroiditis, subacute granulomatous thyroiditis, and silent lymphocytic thyroiditis), Pendred's syndrome, myxedema, cretinism, thyrotoxicosis, thyroid hormone coupling defect, thymic aplasia, Hurthle cell tumours of the thyroid, thyroid cancer, thyroid carcinoma, Medullary thyroid carcinoma; disorders and/or diseases of the parathyroid, such as, for example, hyperparathyroidism, hypoparathyroidism; disorders and/or diseases of the hypothalamus.

In addition, endocrine system and/or hormone imbalance disorders and/or diseases may also include disorders and/or diseases of the testes or ovaries, including cancer. Other disorders and/or diseases of the testes or ovaries further include, for example, ovarian cancer, polycystic ovary syndrome, Klinefelter's syndrome, vanishing testes syndrome (bilateral anorchia), congenital absence of Leydig's cells, cryptorchidism, Noonan's syndrome, myotonic dystrophy, capillary haemangioma of the testis (benign), neoplasias of the testis and neo-testis.

Moreover, endocrine system and/or hormone imbalance disorders and/or diseases may also include disorders and/or diseases such as, for example, polyglandular deficiency syndromes, pheochromocytoma, neuroblastoma, multiple Endocrine neoplasia, and disorders and/or cancers of endocrine tissues.

In another embodiment, albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may be used to diagnose, prognose, prevent, and/or treat endocrine diseases and/or disorders associated

with the tissue(s) in which the Therapeutic protein corresponding to the Therapeutic protein portion of the albumin protein of the invention is expressed,

### **Reproductive System Disorders**

5           The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used for the diagnosis, treatment, or prevention of diseases and/or disorders of the reproductive system. Reproductive system disorders that can be treated by the compositions of the invention, include, but are not limited to, reproductive system injuries, infections, neoplastic disorders, congenital  
10       defects, and diseases or disorders which result in infertility, complications with pregnancy, labor, or parturition, and postpartum difficulties.

Reproductive system disorders and/or diseases include diseases and/or disorders of the testes, including testicular atrophy, testicular feminization, cryptorchism (unilateral and bilateral), anorchia, ectopic testis, epididymitis and orchitis (typically resulting from  
15       infections such as, for example, gonorrhea, mumps, tuberculosis, and syphilis), testicular torsion, vasitis nodosa, germ cell tumors (e.g., seminomas, embryonal cell carcinomas, teratocarcinomas, choriocarcinomas, yolk sac tumors, and teratomas), stromal tumors (e.g., Leydig cell tumors), hydrocele, hematocele, varicocele, spermatocele, inguinal hernia, and disorders of sperm production (e.g., immotile cilia syndrome, aspermia,  
20       asthenozoospermia, azoospermia, oligospermia, and teratozoospermia).

Reproductive system disorders also include disorders of the prostate gland, such as acute non-bacterial prostatitis, chronic non-bacterial prostatitis, acute bacterial prostatitis, chronic bacterial prostatitis, prostatodystonia, prostatosis, granulomatous prostatitis, malacoplakia, benign prostatic hypertrophy or hyperplasia, and prostate neoplastic  
25       disorders, including adenocarcinomas, transitional cell carcinomas, ductal carcinomas, and squamous cell carcinomas.

Additionally, the compositions of the invention may be useful in the diagnosis, treatment, and/or prevention of disorders or diseases of the penis and urethra, including inflammatory disorders, such as balanoposthitis, balanitis xerotica obliterans, phimosis,  
30       paraphimosis, syphilis, herpes simplex virus, gonorrhea, non-gonococcal urethritis, chlamydia, mycoplasma, trichomonas, HIV, AIDS, Reiter's syndrome, condyloma acuminatum, condyloma latum, and pearly penile papules; urethral abnormalities, such as

hypospadias, epispadias, and phimosis; premalignant lesions, including Erythroplasia of Queyrat, Bowen's disease, Bowenoid paplosis, giant condyloma of Buscke-Lowenstein, and verrucous carcinoma; penile cancers, including squamous cell carcinomas, carcinoma in situ, verrucous carcinoma, and disseminated penile carcinoma; urethral neoplastic disorders, including penile urethral carcinoma, bulbomembranous urethral carcinoma, and prostatic urethral carcinoma; and erectile disorders, such as priapism, Peyronie's disease, erectile dysfunction, and impotence.

Moreover, diseases and/or disorders of the vas deferens include vasculitis and CBAVD (congenital bilateral absence of the vas deferens); additionally, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used in the diagnosis, treatment, and/or prevention of diseases and/or disorders of the seminal vesicles, including hydatid disease, congenital chloride diarrhea, and polycystic kidney disease.

Other disorders and/or diseases of the male reproductive system include, for example, Klinefelter's syndrome, Young's syndrome, premature ejaculation, diabetes mellitus, cystic fibrosis, Kartagener's syndrome, high fever, multiple sclerosis, and gynecomastia.

Further, the polynucleotides, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used in the diagnosis, treatment, and/or prevention of diseases and/or disorders of the vagina and vulva, including bacterial vaginosis, candida vaginitis, herpes simplex virus, chancroid, granuloma inguinale, lymphogranuloma venereum, scabies, human papillomavirus, vaginal trauma, vulvar trauma, adenositis, chlamydia vaginitis, gonorrhea, trichomonas vaginitis, condyloma acuminatum, syphilis, molluscum contagiosum, atrophic vaginitis, Paget's disease, lichen sclerosus, lichen planus, vulvodynia, toxic shock syndrome, vaginismus, vulvovaginitis, vulvar vestibulitis, and neoplastic disorders, such as squamous cell hyperplasia, clear cell carcinoma, basal cell carcinoma, melanomas, cancer of Bartholin's gland, and vulvar intraepithelial neoplasia.

Disorders and/or diseases of the uterus include dysmenorrhea, retroverted uterus, endometriosis, fibroids, adenomyosis, anovulatory bleeding, amenorrhea, Cushing's syndrome, hydatidiform moles, Asherman's syndrome, premature menopause, precocious puberty, uterine polyps, dysfunctional uterine bleeding (e.g., due to aberrant hormonal

signals), and neoplastic disorders, such as adenocarcinomas, leiomyosarcomas, and sarcomas. Additionally, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be useful as a marker or detector of, as well as in the diagnosis, treatment, and/or prevention of congenital uterine abnormalities, such as bicornuate uterus, septate uterus, simple unicornuate uterus, unicornuate uterus with a noncavitary rudimentary horn, unicornuate uterus with a non-communicating cavitary rudimentary horn, unicornuate uterus with a communicating cavitary horn, arcuate uterus, uterine didelphys, and T-shaped uterus.

Ovarian diseases and/or disorders include anovulation, polycystic ovary syndrome (Stein-Leventhal syndrome), ovarian cysts, ovarian hypofunction, ovarian insensitivity to gonadotropins, ovarian overproduction of androgens, right ovarian vein syndrome, amenorrhea, hirsutism, and ovarian cancer (including, but not limited to, primary and secondary cancerous growth, Sertoli-Leydig tumors, endometrioid carcinoma of the ovary, ovarian papillary serous adenocarcinoma, ovarian mucinous adenocarcinoma, and Ovarian Krukenberg tumors).

Cervical diseases and/or disorders include cervicitis, chronic cervicitis, mucopurulent cervicitis, cervical dysplasia, cervical polyps, Nabothian cysts, cervical erosion, cervical incompetence, and cervical neoplasms (including, for example, cervical carcinoma, squamous metaplasia, squamous cell carcinoma, adenosquamous cell neoplasia, and columnar cell neoplasia).

Additionally, diseases and/or disorders of the reproductive system include disorders and/or diseases of pregnancy, including miscarriage and stillbirth, such as early abortion, late abortion, spontaneous abortion, induced abortion, therapeutic abortion, threatened abortion, missed abortion, incomplete abortion, complete abortion, habitual abortion, missed abortion, and septic abortion; ectopic pregnancy, anemia, Rh incompatibility, vaginal bleeding during pregnancy, gestational diabetes, intrauterine growth retardation, polyhydramnios, HELLP syndrome, abruptio placentae, placenta previa, hyperemesis, preeclampsia, eclampsia, herpes gestationis, and urticaria of pregnancy. Additionally, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may be used in the diagnosis, treatment, and/or prevention of diseases that can complicate pregnancy, including heart disease, heart failure, rheumatic heart disease, congenital heart disease,

mitral valve prolapse, high blood pressure, anemia, kidney disease, infectious disease (e.g., rubella, cytomegalovirus, toxoplasmosis, infectious hepatitis, chlamydia, HIV, AIDS, and genital herpes), diabetes mellitus, Graves' disease, thyroiditis, hypothyroidism, Hashimoto's thyroiditis, chronic active hepatitis, cirrhosis of the liver, primary biliary cirrhosis, asthma, systemic lupus erythematosus, rheumatoid arthritis, myasthenia gravis, idiopathic thrombocytopenic purpura, appendicitis, ovarian cysts, gallbladder disorders, and obstruction of the intestine.

Complications associated with labor and parturition include premature rupture of the membranes, pre-term labor, post-term pregnancy, postmaturity, labor that progresses too slowly, fetal distress (e.g., abnormal heart rate (fetal or maternal), breathing problems, and abnormal fetal position), shoulder dystocia, prolapsed umbilical cord, amniotic fluid embolism, and aberrant uterine bleeding.

Further, diseases and/or disorders of the postdelivery period, including endometritis, myometritis, parametritis, peritonitis, pelvic thrombophlebitis, pulmonary embolism, endotoxemia, pyelonephritis, saphenous thrombophlebitis, mastitis, cystitis, postpartum hemorrhage, and inverted uterus.

Other disorders and/or diseases of the female reproductive system that may be diagnosed, treated, and/or prevented by the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention include, for example, Turner's syndrome, pseudohermaphroditism, premenstrual syndrome, pelvic inflammatory disease, pelvic congestion (vascular engorgement), frigidity, anorgasmia, dyspareunia, ruptured fallopian tube, and Mittelschmerz.

## **Infectious Disease**

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention can be used to treat or detect infectious agents. For example, by increasing the immune response, particularly increasing the proliferation and differentiation of B and/or T cells, infectious diseases may be treated. The immune response may be increased by either enhancing an existing immune response, or by initiating a new immune response. Alternatively, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may also directly

inhibit the infectious agent, without necessarily eliciting an immune response.

Viruses are one example of an infectious agent that can cause disease or symptoms that can be treated or detected by albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention. Examples of viruses, include, but are not limited to Examples of viruses, include, but are not limited to the following DNA and RNA viruses and viral families: Arbovirus, Adenoviridae, Arenaviridae, Arterivirus, Birnaviridae, Bunyaviridae, Caliciviridae, Circoviridae, Coronaviridae, Dengue, EBV, HIV, Flaviviridae, Hepadnaviridae (Hepatitis), Herpesviridae (such as, Cytomegalovirus, Herpes Simplex, Herpes Zoster), Mononegavirus (e.g., Paramyxoviridae, Morbillivirus, Rhabdoviridae), Orthomyxoviridae (e.g., Influenza A, Influenza B, and parainfluenza), Papiloma virus, Papovaviridae, Parvoviridae, Picornaviridae, Poxviridae (such as Smallpox or Vaccinia), Reoviridae (e.g., Rotavirus), Retroviridae (HTLV-I, HTLV-II, Lentivirus), and Togaviridae (e.g., Rubivirus). Viruses falling within these families can cause a variety of diseases or symptoms, including, but not limited to: arthritis, bronchiollitis, respiratory syncytial virus, encephalitis, eye infections (e.g., conjunctivitis, keratitis), chronic fatigue syndrome, hepatitis (A, B, C, E, Chronic Active, Delta), Japanese B encephalitis, Junin, Chikungunya, Rift Valley fever, yellow fever, meningitis, opportunistic infections (e.g., AIDS), pneumonia, Burkitt's Lymphoma, chickenpox, hemorrhagic fever, Measles, Mumps, Parainfluenza, Rabies, the common cold, Polio, leukemia, Rubella, sexually transmitted diseases, skin diseases (e.g., Kaposi's, warts), and viremia. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, can be used to treat or detect any of these symptoms or diseases. In specific embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat: meningitis, Dengue, EBV, and/or hepatitis (e.g., hepatitis B). In an additional specific embodiment fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat patients nonresponsive to one or more other commercially available hepatitis vaccines. In a further specific embodiment fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat AIDS.

Similarly, bacterial and fungal agents that can cause disease or symptoms and that can be treated or detected by albumin fusion proteins of the invention and/or

polynucleotides encoding albumin fusion proteins of the invention include, but not limited to, the following Gram-Negative and Gram-positive bacteria, bacterial families, and fungi:

Actinomyces (e.g., Norcardia), Acinetobacter, *Cryptococcus neoformans*, Aspergillus, Bacillaceae (e.g., *Bacillus anthraxis*), Bacteroides (e.g., *Bacteroides fragilis*),  
 5 Blastomycosis, Bordetella, Borrelia (e.g., *Borrelia burgdorferi*), Brucella, Candidia, Campylobacter, Chlamydia, Clostridium (e.g., *Clostridium botulinum*, *Clostridium difficile*, *Clostridium perfringens*, *Clostridium tetani*), Coccidioides, Corynebacterium (e.g., *Corynebacterium diphtheriae*), Cryptococcus, Dermatocycoses, *E. coli* (e.g., Enterotoxigenic *E. coli* and Enterohemorrhagic *E. coli*), Enterobacter (e.g. *Enterobacter*  
 10 *aerogenes*), Enterobacteriaceae (Klebsiella, Salmonella (e.g., *Salmonella typhi*, *Salmonella enteritidis*, *Salmonella typhi*), Serratia, Yersinia, Shigella), Erysipelothrix, Haemophilus (e.g., *Haemophilus influenza* type B), Helicobacter, Legionella (e.g., *Legionella pneumophila*), Leptospira, Listeria (e.g., *Listeria monocytogenes*), Mycoplasma, Mycobacterium (e.g., *Mycobacterium leprae* and *Mycobacterium tuberculosis*),  
 15 Vibrio (e.g., *Vibrio cholerae*), Neisseriaceae (e.g., *Neisseria gonorrhea*, *Neisseria meningitidis*), Pasteurellaceae, Proteus, Pseudomonas (e.g., *Pseudomonas aeruginosa*), Rickettsiaceae, Spirochetes (e.g., Treponema spp., Leptospira spp., Borrelia spp.), Shigella spp., Staphylococcus (e.g., *Staphylococcus aureus*), Meningioccus, Pneumococcus and Streptococcus (e.g., *Streptococcus pneumoniae* and Groups A, B, and  
 20 C Streptococci), and Ureaplasmas. These bacterial, parasitic, and fungal families can cause diseases or symptoms, including, but not limited to: antibiotic-resistant infections, bacteremia, endocarditis, septicemia, eye infections (e.g., conjunctivitis), uveitis, tuberculosis, gingivitis, bacterial diarrhea, opportunistic infections (e.g., AIDS related infections), paronychia, prosthesis-related infections, dental caries, Reiter's Disease,  
 25 respiratory tract infections, such as Whooping Cough or Empyema, sepsis, Lyme Disease, Cat-Scratch Disease, dysentery, paratyphoid fever, food poisoning, Legionella disease, chronic and acute inflammation, erythema, yeast infections, typhoid, pneumonia, gonorrhea, meningitis (e.g., meningitis types A and B), chlamydia, syphilis, diphtheria, leprosy, brucellosis, peptic ulcers, anthrax, spontaneous abortions, birth defects,  
 30 pneumonia, lung infections, ear infections, deafness, blindness, lethargy, malaise, vomiting, chronic diarrhea, Crohn's disease, colitis, vaginosis, sterility, pelvic inflammatory diseases, candidiasis, paratuberculosis, tuberculosis, lupus, botulism,

gangrene, tetanus, impetigo, Rheumatic Fever, Scarlet Fever, sexually transmitted diseases, skin diseases (e.g., cellulitis, dermatocycoses), toxemia, urinary tract infections, wound infections, noscomial infections. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, can be used to treat or  
5 detect any of these symptoms or diseases. In specific embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat: tetanus, diphtheria, botulism, and/or meningitis type B.

Moreover, parasitic agents causing disease or symptoms that can be treated, prevented, and/or diagnosed by fusion proteins of the invention and/or polynucleotides  
10 encoding albumin fusion proteins of the invention include, but not limited to, the following families or class: Amebiasis, Babesiosis, Coccidiosis, Cryptosporidiosis, Dientamoebiasis, Dourine, Ectoparasitic, Giardiasis, Helminthiasis, Leishmaniasis, Schistosoma, Theileriasis, Toxoplasmosis, Trypanosomiasis, and Trichomonas and Sporozoans (e.g., *Plasmodium virax*, *Plasmodium falciparum*, *Plasmodium malariae* and  
15 *Plasmodium ovale*). These parasites can cause a variety of diseases or symptoms, including, but not limited to: Scabies, Trombiculiasis, eye infections, intestinal disease (e.g., dysentery, giardiasis), liver disease, lung disease, opportunistic infections (e.g., AIDS related), malaria, pregnancy complications, and toxoplasmosis. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the  
20 invention, can be used to treat, prevent, and/or diagnose any of these symptoms or diseases. In specific embodiments, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention are used to treat, prevent, and/or diagnose malaria.

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin  
25 fusion proteins of the invention could either be by administering an effective amount of an albumin fusion protein of the invention to the patient, or by removing cells from the patient, supplying the cells with a polynucleotide of the present invention, and returning the engineered cells to the patient (ex vivo therapy). Moreover, the albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the  
30 invention can be used as an antigen in a vaccine to raise an immune response against infectious disease.



**Regeneration**

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention can be used to differentiate, proliferate, and attract cells, leading to the regeneration of tissues. (See, Science 276:59-87 (1997)). The regeneration of tissues could be used to repair, replace, or protect tissue damaged by congenital defects, trauma (wounds, burns, incisions, or ulcers), age, disease (e.g. osteoporosis, osteoarthritis, periodontal disease, liver failure), surgery, including cosmetic plastic surgery, fibrosis, reperfusion injury, or systemic cytokine damage.

Tissues that could be regenerated using the present invention include organs (e.g., pancreas, liver, intestine, kidney, skin, endothelium), muscle (smooth, skeletal or cardiac), vasculature (including vascular and lymphatics), nervous, hematopoietic, and skeletal (bone, cartilage, tendon, and ligament) tissue. Preferably, regeneration occurs without or decreased scarring. Regeneration also may include angiogenesis.

Moreover, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may increase regeneration of tissues difficult to heal. For example, increased tendon/ligament regeneration would quicken recovery time after damage. Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention could also be used prophylactically in an effort to avoid damage. Specific diseases that could be treated include of tendinitis, carpal tunnel syndrome, and other tendon or ligament defects. A further example of tissue regeneration of non-healing wounds includes pressure ulcers, ulcers associated with vascular insufficiency, surgical, and traumatic wounds.

Similarly, nerve and brain tissue could also be regenerated by using fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, to proliferate and differentiate nerve cells. Diseases that could be treated using this method include central and peripheral nervous system diseases, neuropathies, or mechanical and traumatic disorders (e.g., spinal cord disorders, head trauma, cerebrovascular disease, and stroke). Specifically, diseases associated with peripheral nerve injuries, peripheral neuropathy (e.g., resulting from chemotherapy or other medical therapies), localized neuropathies, and central nervous system diseases (e.g., Alzheimer's disease, Parkinson's disease, Huntington's disease, amyotrophic lateral sclerosis, and Shy-Drager syndrome), could all be treated using the albumin fusion proteins of the invention

and/or polynucleotides encoding albumin fusion proteins of the invention.

### Gastrointestinal Disorders

5 Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention, may be used to treat, prevent, diagnose, and/or prognose gastrointestinal disorders, including inflammatory diseases and/or conditions, infections, cancers (e.g., intestinal neoplasms (carcinoid tumor of the small intestine, non-Hodgkin's lymphoma of the small intestine, small bowel lymphoma)), and ulcers, such as peptic  
10 ulcers.

Gastrointestinal disorders include dysphagia, odynophagia, inflammation of the esophagus, peptic esophagitis, gastric reflux, submucosal fibrosis and stricturing, Mallory-Weiss lesions, leiomyomas, lipomas, epidermal cancers, adenocarcinomas, gastric retention disorders, gastroenteritis, gastric atrophy, gastric/stomach cancers, polyps of the  
15 stomach, autoimmune disorders such as pernicious anemia, pyloric stenosis, gastritis (bacterial, viral, eosinophilic, stress-induced, chronic erosive, atrophic, plasma cell, and Ménétrier's), and peritoneal diseases (e.g., chyloperitoneum, hemoperitoneum, mesenteric cyst, mesenteric lymphadenitis, mesenteric vascular occlusion, panniculitis, neoplasms, peritonitis, pneumoperitoneum, subphrenic abscess,).

20 Gastrointestinal disorders also include disorders associated with the small intestine, such as malabsorption syndromes, distension, irritable bowel syndrome, sugar intolerance, celiac disease, duodenal ulcers, duodenitis, tropical sprue, Whipple's disease, intestinal lymphangiectasia, Crohn's disease, appendicitis, obstructions of the ileum, Meckel's diverticulum, multiple diverticula, failure of complete rotation of the small and large  
25 intestine, lymphoma, and bacterial and parasitic diseases (such as Traveler's diarrhea, typhoid and paratyphoid, cholera, infection by Roundworms (*Ascariasis lumbricoides*), Hookworms (*Ancylostoma duodenale*), Threadworms (*Enterobius vermicularis*), Tapeworms (*Taenia saginata*, *Echinococcus granulosus*, *Diphyllobothrium spp.*, and *T. solium*).

30 Liver diseases and/or disorders include intrahepatic cholestasis (alagille syndrome, biliary liver cirrhosis), fatty liver (alcoholic fatty liver, reye syndrome), hepatic vein thrombosis, hepatolenticular degeneration, hepatomegaly, hepatopulmonary syndrome,

hepatorenal syndrome, portal hypertension (esophageal and gastric varices), liver abscess (amebic liver abscess), liver cirrhosis (alcoholic, biliary and experimental), alcoholic liver diseases (fatty liver, hepatitis, cirrhosis), parasitic (hepatic echinococcosis, fascioliasis, amebic liver abscess), jaundice (hemolytic, hepatocellular, and cholestatic), cholestasis, portal hypertension, liver enlargement, ascites, hepatitis (alcoholic hepatitis, animal hepatitis, chronic hepatitis (autoimmune, hepatitis B, hepatitis C, hepatitis D, drug induced), toxic hepatitis, viral human hepatitis (hepatitis A, hepatitis B, hepatitis C, hepatitis D, hepatitis E), Wilson's disease, granulomatous hepatitis, secondary biliary cirrhosis, hepatic encephalopathy, portal hypertension, varices, hepatic encephalopathy, primary biliary cirrhosis, primary sclerosing cholangitis, hepatocellular adenoma, hemangiomas, bile stones, liver failure (hepatic encephalopathy, acute liver failure), and liver neoplasms (angiomyolipoma, calcified liver metastases, cystic liver metastases, epithelial tumors, fibrolamellar hepatocarcinoma, focal nodular hyperplasia, hepatic adenoma, hepatobiliary cystadenoma, hepatoblastoma, hepatocellular carcinoma, hepatoma, liver cancer, liver hemangioendothelioma, mesenchymal hamartoma, mesenchymal tumors of liver, nodular regenerative hyperplasia, benign liver tumors (Hepatic cysts [Simple cysts, Polycystic liver disease, Hepatobiliary cystadenoma, Choledochal cyst], Mesenchymal tumors [Mesenchymal hamartoma, Infantile hemangioendothelioma, Hemangioma, Peliosis hepatis, Lipomas, Inflammatory pseudotumor, Miscellaneous], Epithelial tumors [Bile duct epithelium (Bile duct hamartoma, Bile duct adenoma), Hepatocyte (Adenoma, Focal nodular hyperplasia, Nodular regenerative hyperplasia)], malignant liver tumors [hepatocellular, hepatoblastoma, hepatocellular carcinoma, cholangiocellular, cholangiocarcinoma, cystadenocarcinoma, tumors of blood vessels, angiosarcoma, Kaposi's sarcoma, hemangioendothelioma, other tumors, embryonal sarcoma, fibrosarcoma, leiomyosarcoma, rhabdomyosarcoma, carcinosarcoma, teratoma, carcinoid, squamous carcinoma, primary lymphoma]), peliosis hepatis, erythrohepatic porphyria, hepatic porphyria (acute intermittent porphyria, porphyria cutanea tarda), Zellweger syndrome).

Pancreatic diseases and/or disorders include acute pancreatitis, chronic pancreatitis (acute necrotizing pancreatitis, alcoholic pancreatitis), neoplasms (adenocarcinoma of the pancreas, cystadenocarcinoma, insulinoma, gastrinoma, and glucagonoma, cystic neoplasms, islet-cell tumors, pancreoblastoma), and other pancreatic diseases (e.g., cystic

fibrosis, cyst (pancreatic pseudocyst, pancreatic fistula, insufficiency)).

Gallbladder diseases include gallstones (cholelithiasis and choledocholithiasis), postcholecystectomy syndrome, diverticulosis of the gallbladder, acute cholecystitis, chronic cholecystitis, bile duct tumors, and mucocele.

- 5 Diseases and/or disorders of the large intestine include antibiotic-associated colitis, diverticulitis, ulcerative colitis, acquired megacolon, abscesses, fungal and bacterial infections, anorectal disorders (e.g., fissures, hemorrhoids), colonic diseases (colitis, colonic neoplasms [colon cancer, adenomatous colon polyps (e.g., villous adenoma), colon carcinoma, colorectal cancer], colonic diverticulitis, colonic diverticulosis, megacolon
- 10 [Hirschsprung disease, toxic megacolon]; sigmoid diseases [proctocolitis, sigmoid neoplasms]), constipation, Crohn's disease, diarrhea (infantile diarrhea, dysentery), duodenal diseases (duodenal neoplasms, duodenal obstruction, duodenal ulcer, duodenitis), enteritis (enterocolitis), HIV enteropathy, ileal diseases (ileal neoplasms, ileitis), immunoproliferative small intestinal disease, inflammatory bowel disease
- 15 (ulcerative colitis, Crohn's disease), intestinal atresia, parasitic diseases (anisakiasis, balantidiasis, blastocystis infections, cryptosporidiosis, dientamoebiasis, amebic dysentery, giardiasis), intestinal fistula (rectal fistula), intestinal neoplasms (cecal neoplasms, colonic neoplasms, duodenal neoplasms, ileal neoplasms, intestinal polyps, jejunal neoplasms, rectal neoplasms), intestinal obstruction (afferent loop syndrome, duodenal obstruction,
- 20 impacted feces, intestinal pseudo-obstruction [cecal volvulus], intussusception), intestinal perforation, intestinal polyps (colonic polyps, gardner syndrome, peutz-jeghers syndrome), jejunal diseases (jejunal neoplasms), malabsorption syndromes (blind loop syndrome, celiac disease, lactose intolerance, short bowel syndrome, tropical sprue, whipple's disease), mesenteric vascular occlusion, pneumatosis cystoides intestinalis, protein-losing
- 25 enteropathies (intestinal lymphagiectasis), rectal diseases (anus diseases, fecal incontinence, hemorrhoids, proctitis, rectal fistula, rectal prolapse, rectocele), peptic ulcer (duodenal ulcer, peptic esophagitis, hemorrhage, perforation, stomach ulcer, Zollinger-Ellison syndrome), postgastrectomy syndromes (dumping syndrome), stomach diseases (e.g., achlorhydria, duodenogastric reflux (bile reflux), gastric antral vascular ectasia,
- 30 gastric fistula, gastric outlet obstruction, gastritis (atrophic or hypertrophic), gastroparesis, stomach dilatation, stomach diverticulum, stomach neoplasms (gastric cancer, gastric polyps, gastric adenocarcinoma, hyperplastic gastric polyp), stomach rupture, stomach

ulcer, stomach volvulus), tuberculosis, visceroptosis, vomiting (e.g., hematemesis, hyperemesis gravidarum, postoperative nausea and vomiting) and hemorrhagic colitis.

Further diseases and/or disorders of the gastrointestinal system include biliary tract diseases, such as, gastroschisis, fistula (e.g., biliary fistula, esophageal fistula, gastric  
5 fistula, intestinal fistula, pancreatic fistula), neoplasms (e.g., biliary tract neoplasms, esophageal neoplasms, such as adenocarcinoma of the esophagus, esophageal squamous cell carcinoma, gastrointestinal neoplasms, pancreatic neoplasms, such as adenocarcinoma of the pancreas, mucinous cystic neoplasm of the pancreas, pancreatic cystic neoplasms, pancreatoblastoma, and peritoneal neoplasms), esophageal disease (e.g., bullous diseases,  
10 candidiasis, glycogenic acanthosis, ulceration, barrett esophagus varices, atresia, cyst, diverticulum (e.g., Zenker's diverticulum), fistula (e.g., tracheoesophageal fistula), motility disorders (e.g., CREST syndrome, deglutition disorders, achalasia, spasm, gastroesophageal reflux), neoplasms, perforation (e.g., Boerhaave syndrome, Mallory-Weiss syndrome), stenosis, esophagitis, diaphragmatic hernia (e.g., hiatal hernia);  
15 gastrointestinal diseases, such as, gastroenteritis (e.g., cholera morbus, norwalk virus infection), hemorrhage (e.g., hematemesis, melena, peptic ulcer hemorrhage), stomach neoplasms (gastric cancer, gastric polyps, gastric adenocarcinoma, stomach cancer)), hernia (e.g., congenital diaphragmatic hernia, femoral hernia, inguinal hernia, obturator hernia, umbilical hernia, ventral hernia), and intestinal diseases (e.g., cecal diseases  
20 (appendicitis, cecal neoplasms)).

### Chemotaxis

Albumin fusion proteins of the invention and/or polynucleotides encoding albumin  
25 fusion proteins of the invention may have chemotaxis activity. A chemotaxic molecule attracts or mobilizes cells (e.g., monocytes, fibroblasts, neutrophils, T-cells, mast cells, eosinophils, epithelial and/or endothelial cells) to a particular site in the body, such as inflammation, infection, or site of hyperproliferation. The mobilized cells can then fight off and/or heal the particular trauma or abnormality.

30 Albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may increase chemotaxic activity of particular cells. These chemotactic molecules can then be used to treat inflammation, infection,

hyperproliferative disorders, or any immune system disorder by increasing the number of cells targeted to a particular location in the body. For example, chemotactic molecules can be used to treat wounds and other trauma to tissues by attracting immune cells to the injured location. Chemotactic molecules of the present invention can also attract  
5 fibroblasts, which can be used to treat wounds.

It is also contemplated that fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may inhibit chemotactic activity. These molecules could also be used to treat disorders. Thus, fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention could be used as  
10 an inhibitor of chemotaxis.

### **Binding Activity**

Albumin fusion proteins of the invention may be used to screen for molecules that bind to the Therapeutic protein portion of the fusion protein or for molecules to which the  
15 Therapeutic protein portion of the fusion protein binds. The binding of the fusion protein and the molecule may activate (agonist), increase, inhibit (antagonist), or decrease activity of the fusion protein or the molecule bound. Examples of such molecules include antibodies, oligonucleotides, proteins (e.g., receptors), or small molecules.

Preferably, the molecule is closely related to the natural ligand of the Therapeutic  
20 protein portion of the fusion protein of the invention, e.g., a fragment of the ligand, or a natural substrate, a ligand, a structural or functional mimetic. (See, Coligan et al., Current Protocols in Immunology 1(2):Chapter 5 (1991)). Similarly, the molecule can be closely related to the natural receptor to which the Therapeutic protein portion of an albumin fusion protein of the invention binds, or at least, a fragment of the receptor capable of  
25 being bound by the Therapeutic protein portion of an albumin fusion protein of the invention (e.g., active site). In either case, the molecule can be rationally designed using known techniques.

Preferably, the screening for these molecules involves producing appropriate cells which express the albumin fusion proteins of the invention. Preferred cells include cells  
30 from mammals, yeast, *Drosophila*, or *E. coli*.

The assay may simply test binding of a candidate compound to an albumin fusion protein of the invention, wherein binding is detected by a label, or in an assay involving

competition with a labeled competitor. Further, the assay may test whether the candidate compound results in a signal generated by binding to the fusion protein.

Alternatively, the assay can be carried out using cell-free preparations, fusion protein/molecule affixed to a solid support, chemical libraries, or natural product mixtures.

5 The assay may also simply comprise the steps of mixing a candidate compound with a solution containing an albumin fusion protein, measuring fusion protein/molecule activity or binding, and comparing the fusion protein/molecule activity or binding to a standard.

Preferably, an ELISA assay can measure fusion protein level or activity in a sample (e.g., biological sample) using a monoclonal or polyclonal antibody. The antibody can  
10 measure fusion protein level or activity by either binding, directly or indirectly, to the albumin fusion protein or by competing with the albumin fusion protein for a substrate.

Additionally, the receptor to which a Therapeutic protein portion of an albumin fusion protein of the invention binds can be identified by numerous methods known to those of skill in the art, for example, ligand panning and FACS sorting (Coligan, et al.,  
15 Current Protocols in Immun., 1(2), Chapter 5, (1991)). For example, in cases wherein the Therapeutic protein portion of the fusion protein corresponds to FGF, expression cloning may be employed wherein polyadenylated RNA is prepared from a cell responsive to the albumin fusion protein, for example, NIH3T3 cells which are known to contain multiple receptors for the FGF family proteins, and SC-3 cells, and a cDNA library created from  
20 this RNA is divided into pools and used to transfect COS cells or other cells that are not responsive to the albumin fusion protein. Transfected cells which are grown on glass slides are exposed to the albumin fusion protein of the present invention, after they have been labeled. The albumin fusion proteins can be labeled by a variety of means including iodination or inclusion of a recognition site for a site-specific protein kinase.

25 Following fixation and incubation, the slides are subjected to auto-radiographic analysis. Positive pools are identified and sub-pools are prepared and re-transfected using an iterative sub-pooling and re-screening process, eventually yielding a single clones that encodes the putative receptor.

As an alternative approach for receptor identification, a labeled albumin fusion  
30 protein can be photoaffinity linked with cell membrane or extract preparations that express the receptor molecule for the Therapeutic protein component of an albumin fusion protein of the invention, the linked material may be resolved by PAGE analysis and

exposed to X-ray film. The labeled complex containing the receptors of the fusion protein can be excised, resolved into peptide fragments, and subjected to protein microsequencing.

The amino acid sequence obtained from microsequencing would be used to design a set of degenerate oligonucleotide probes to screen a cDNA library to identify the genes encoding the putative receptors.

Moreover, the techniques of gene-shuffling, motif-shuffling, exon-shuffling, and/or codon-shuffling (collectively referred to as "DNA shuffling") may be employed to modulate the activities of the fusion protein, and/or Therapeutic protein portion or albumin component of an albumin fusion protein of the present invention, thereby effectively generating agonists and antagonists of an albumin fusion protein of the present invention.

*See generally*, U.S. Patent Nos. 5,605,793, 5,811,238, 5,830,721, 5,834,252, and 5,837,458, and Patten, P. A., *et al.*, *Curr. Opin. Biotechnol.* 8:724-33 (1997); Harayama, S. *Trends Biotechnol.* 16(2):76-82 (1998); Hansson, L. O., *et al.*, *J. Mol. Biol.* 287:265-76 (1999); and Lorenzo, M. M. and Blasco, R. *Biotechniques* 24(2):308-13 (1998); each of these patents and publications are hereby incorporated by reference).

In one embodiment, alteration of polynucleotides encoding albumin fusion proteins of the invention and thus, the albumin fusion proteins encoded thereby, may be achieved by DNA shuffling. DNA shuffling involves the assembly of two or more DNA segments into a desired molecule by homologous, or site-specific, recombination. In another

embodiment, polynucleotides encoding albumin fusion proteins of the invention and thus, the albumin fusion proteins encoded thereby, may be altered by being subjected to random mutagenesis by error-prone PCR, random nucleotide insertion or other methods prior to recombination. In another embodiment, one or more components, motifs, sections, parts, domains, fragments, etc., of an albumin fusion protein of the present invention may be

recombined with one or more components, motifs, sections, parts, domains, fragments, etc. of one or more heterologous molecules. In preferred embodiments, the heterologous molecules are family members. In further preferred embodiments, the heterologous molecule is a growth factor such as, for example, platelet-derived growth factor (PDGF), insulin-like growth factor (IGF-I), transforming growth factor (TGF)-alpha, epidermal growth factor (EGF), fibroblast growth factor (FGF), TGF-beta, bone morphogenetic protein (BMP)-2, BMP-4, BMP-5, BMP-6, BMP-7, activins A and B, decapentaplegic(dpp), 60A, OP-2, dorsalin, growth differentiation factors (GDFs), nodal,



MIS, inhibin-alpha, TGF-beta1, TGF-beta2, TGF-beta3, TGF-beta5, and glial-derived neurotrophic factor (GDNF).

5 Other preferred fragments are biologically active fragments of the Therapeutic protein portion and/or albumin component of the albumin fusion proteins of the present invention. Biologically active fragments are those exhibiting activity similar, but not necessarily identical, to an activity of a Therapeutic protein portion and/or albumin component of the albumin fusion proteins of the present invention. The biological activity of the fragments may include an improved desired activity, or a decreased undesirable activity.

10 Additionally, this invention provides a method of screening compounds to identify those which modulate the action of an albumin fusion protein of the present invention. An example of such an assay comprises combining a mammalian fibroblast cell, an albumin fusion protein of the present invention, and the compound to be screened and  $^3\text{[H]}$  thymidine under cell culture conditions where the fibroblast cell would normally  
15 proliferate. A control assay may be performed in the absence of the compound to be screened and compared to the amount of fibroblast proliferation in the presence of the compound to determine if the compound stimulates proliferation by determining the uptake of  $^3\text{[H]}$  thymidine in each case. The amount of fibroblast cell proliferation is measured by liquid scintillation chromatography which measures the incorporation of  $^3\text{[H]}$   
20 thymidine. Both agonist and antagonist compounds may be identified by this procedure.

In another method, a mammalian cell or membrane preparation expressing a receptor for the Therapeutic protein component of a fusion protein of the invention is incubated with a labeled fusion protein of the present invention in the presence of the compound. The ability of the compound to enhance or block this interaction could then be  
25 measured. Alternatively, the response of a known second messenger system following interaction of a compound to be screened and the receptor is measured and the ability of the compound to bind to the receptor and elicit a second messenger response is measured to determine if the compound is a potential fusion protein. Such second messenger systems include but are not limited to, cAMP guanylate cyclase, ion channels or  
30 phosphoinositide hydrolysis.

All of these above assays can be used as diagnostic or prognostic markers. The molecules discovered using these assays can be used to treat disease or to bring about a

particular result in a patient (e.g., blood vessel growth) by activating or inhibiting the fusion protein/molecule. Moreover, the assays can discover agents which may inhibit or enhance the production of the albumin fusion proteins of the invention from suitably manipulated cells or tissues.

5 Therefore, the invention includes a method of identifying compounds which bind to an albumin fusion protein of the invention comprising the steps of: (a) incubating a candidate binding compound with an albumin fusion protein of the present invention; and (b) determining if binding has occurred. Moreover, the invention includes a method of identifying agonists/antagonists comprising the steps of: (a) incubating a candidate  
10 compound with an albumin fusion protein of the present invention, (b) assaying a biological activity, and (b) determining if a biological activity of the fusion protein has been altered.

#### **Targeted Delivery**

15 In another embodiment, the invention provides a method of delivering compositions to targeted cells expressing a receptor for a component of an albumin fusion protein of the invention.

As discussed herein, fusion proteins of the invention may be associated with heterologous polypeptides, heterologous nucleic acids, toxins, or prodrugs via  
20 hydrophobic, hydrophilic, ionic and/or covalent interactions. In one embodiment, the invention provides a method for the specific delivery of compositions of the invention to cells by administering fusion proteins of the invention (including antibodies) that are associated with heterologous polypeptides or nucleic acids. In one example, the invention provides a method for delivering a Therapeutic protein into the targeted cell. In another  
25 example, the invention provides a method for delivering a single stranded nucleic acid (e.g., antisense or ribozymes) or double stranded nucleic acid (e.g., DNA that can integrate into the cell's genome or replicate episomally and that can be transcribed) into the targeted cell.

In another embodiment, the invention provides a method for the specific  
30 destruction of cells (e.g., the destruction of tumor cells) by administering an albumin fusion protein of the invention (e.g., polypeptides of the invention or antibodies of the invention) in association with toxins or cytotoxic prodrugs.

By "toxin" is meant compounds that bind and activate endogenous cytotoxic effector systems, radioisotopes, holotoxins, modified toxins, catalytic subunits of toxins, or any molecules or enzymes not normally present in or on the surface of a cell that under defined conditions cause the cell's death. Toxins that may be used according to the methods of the invention include, but are not limited to, radioisotopes known in the art, compounds such as, for example, antibodies (or complement fixing containing portions thereof) that bind an inherent or induced endogenous cytotoxic effector system, thymidine kinase, endonuclease, RNase, alpha toxin, ricin, abrin, *Pseudomonas* exotoxin A, diphtheria toxin, saporin, momordin, gelonin, pokeweed antiviral protein, alpha-sarcin and cholera toxin. By "cytotoxic prodrug" is meant a non-toxic compound that is converted by an enzyme, normally present in the cell, into a cytotoxic compound. Cytotoxic prodrugs that may be used according to the methods of the invention include, but are not limited to, glutamyl derivatives of benzoic acid mustard alkylating agent, phosphate derivatives of etoposide or mitomycin C, cytosine arabinoside, daunorubisin, and phenoxyacetamide derivatives of doxorubicin.

### Drug Screening

Further contemplated is the use of the albumin fusion proteins of the present invention, or the polynucleotides encoding these fusion proteins, to screen for molecules which modify the activities of the albumin fusion protein of the present invention or proteins corresponding to the Therapeutic protein portion of the albumin fusion protein. Such a method would include contacting the fusion protein with a selected compound(s) suspected of having antagonist or agonist activity, and assaying the activity of the fusion protein following binding.

This invention is particularly useful for screening therapeutic compounds by using the albumin fusion proteins of the present invention, or binding fragments thereof, in any of a variety of drug screening techniques. The albumin fusion protein employed in such a test may be affixed to a solid support, expressed on a cell surface, free in solution, or located intracellularly. One method of drug screening utilizes eukaryotic or prokaryotic host cells which are stably transformed with recombinant nucleic acids expressing the albumin fusion protein. Drugs are screened against such transformed cells or supernatants

obtained from culturing such cells, in competitive binding assays. One may measure, for example, the formulation of complexes between the agent being tested and an albumin fusion protein of the present invention.

Thus, the present invention provides methods of screening for drugs or any other  
5 agents which affect activities mediated by the albumin fusion proteins of the present invention. These methods comprise contacting such an agent with an albumin fusion protein of the present invention or a fragment thereof and assaying for the presence of a complex between the agent and the albumin fusion protein or a fragment thereof, by methods well known in the art. In such a competitive binding assay, the agents to screen  
10 are typically labeled. Following incubation, free agent is separated from that present in bound form, and the amount of free or uncomplexed label is a measure of the ability of a particular agent to bind to the albumin fusion protein of the present invention.

Another technique for drug screening provides high throughput screening for compounds having suitable binding affinity to an albumin fusion protein of the present  
15 invention, and is described in great detail in European Patent Application 84/03564, published on September 13, 1984, which is incorporated herein by reference herein. Briefly stated, large numbers of different small peptide test compounds are synthesized on a solid substrate, such as plastic pins or some other surface. The peptide test compounds are reacted with an albumin fusion protein of the present invention and washed. Bound  
20 peptides are then detected by methods well known in the art. Purified albumin fusion protein may be coated directly onto plates for use in the aforementioned drug screening techniques. In addition, non-neutralizing antibodies may be used to capture the peptide and immobilize it on the solid support.

This invention also contemplates the use of competitive drug screening assays in  
25 which neutralizing antibodies capable of binding an albumin fusion protein of the present invention specifically compete with a test compound for binding to the albumin fusion protein or fragments thereof. In this manner, the antibodies are used to detect the presence of any peptide which shares one or more antigenic epitopes with an albumin fusion protein of the invention.

30

**Binding Peptides and Other Molecules**

The invention also encompasses screening methods for identifying polypeptides and nonpolypeptides that bind albumin fusion proteins of the invention, and the binding molecules identified thereby. These binding molecules are useful, for example, as agonists and antagonists of the albumin fusion proteins of the invention. Such agonists and antagonists can be used, in accordance with the invention, in the therapeutic embodiments described in detail, below.

This method comprises the steps of:

contacting an albumin fusion protein of the invention with a plurality of molecules;

10 and

identifying a molecule that binds the albumin fusion protein.

The step of contacting the albumin fusion protein of the invention with the plurality of molecules may be effected in a number of ways. For example, one may contemplate immobilizing the albumin fusion protein on a solid support and bringing a solution of the plurality of molecules in contact with the immobilized polypeptides. Such a procedure would be akin to an affinity chromatographic process, with the affinity matrix being comprised of the immobilized albumin fusion protein of the invention. The molecules having a selective affinity for the albumin fusion protein can then be purified by affinity selection. The nature of the solid support, process for attachment of the albumin fusion protein to the solid support, solvent, and conditions of the affinity isolation or selection are largely conventional and well known to those of ordinary skill in the art.

Alternatively, one may also separate a plurality of polypeptides into substantially separate fractions comprising a subset of or individual polypeptides. For instance, one can separate the plurality of polypeptides by gel electrophoresis, column chromatography, or like method known to those of ordinary skill for the separation of polypeptides. The individual polypeptides can also be produced by a transformed host cell in such a way as to be expressed on or about its outer surface (e.g., a recombinant phage). Individual isolates can then be "probed" by an albumin fusion protein of the invention, optionally in the presence of an inducer should one be required for expression, to determine if any selective affinity interaction takes place between the albumin fusion protein and the individual clone. Prior to contacting the albumin fusion protein with each fraction comprising individual polypeptides, the polypeptides could first be transferred to a solid

support for additional convenience. Such a solid support may simply be a piece of filter membrane, such as one made of nitrocellulose or nylon. In this manner, positive clones could be identified from a collection of transformed host cells of an expression library, which harbor a DNA construct encoding a polypeptide having a selective affinity for an albumin fusion protein of the invention. Furthermore, the amino acid sequence of the polypeptide having a selective affinity for an albumin fusion protein of the invention can be determined directly by conventional means or the coding sequence of the DNA encoding the polypeptide can frequently be determined more conveniently. The primary sequence can then be deduced from the corresponding DNA sequence. If the amino acid sequence is to be determined from the polypeptide itself, one may use microsequencing techniques. The sequencing technique may include mass spectroscopy.

In certain situations, it may be desirable to wash away any unbound polypeptides from a mixture of an albumin fusion protein of the invention and the plurality of polypeptides prior to attempting to determine or to detect the presence of a selective affinity interaction. Such a wash step may be particularly desirable when the albumin fusion protein of the invention or the plurality of polypeptides are bound to a solid support.

The plurality of molecules provided according to this method may be provided by way of diversity libraries, such as random or combinatorial peptide or nonpeptide libraries which can be screened for molecules that specifically bind an albumin fusion protein of the invention. Many libraries are known in the art that can be used, e.g., chemically synthesized libraries, recombinant (e.g., phage display libraries), and *in vitro* translation-based libraries. Examples of chemically synthesized libraries are described in Fodor et al., Science 251:767-773 (1991); Houghten et al., Nature 354:84-86 (1991); Lam et al., Nature 354:82-84 (1991); Medynski, Bio/Technology 12:709-710 (1994); Gallop et al., J. Medicinal Chemistry 37(9):1233-1251 (1994); Ohlmeyer et al., Proc. Natl. Acad. Sci. USA 90:10922-10926 (1993); Erb et al., Proc. Natl. Acad. Sci. USA 91:11422-11426 (1994); Houghten et al., Biotechniques 13:412 (1992); Jayawickreme et al., Proc. Natl. Acad. Sci. USA 91:1614-1618 (1994); Salmon et al., Proc. Natl. Acad. Sci. USA 90:11708-11712 (1993); PCT Publication No. WO 93/20242; and Brenner and Lerner, Proc. Natl. Acad. Sci. USA 89:5381-5383 (1992).

Examples of phage display libraries are described in Scott et al., Science 249:386-390 (1990); Devlin et al., Science, 249:404-406 (1990); Christian et al., 1992, J. Mol.

Biol. 227:711-718 1992); Lenstra, J. Immunol. Meth. 152:149-157 (1992); Kay et al., Gene 128:59-65 (1993); and PCT Publication No. WO 94/18318 dated Aug. 18, 1994.

In vitro translation-based libraries include but are not limited to those described in PCT Publication No. WO 91/05058 dated Apr. 18, 1991; and Mattheakis et al., Proc. Natl. Acad. Sci. USA 91:9022-9026 (1994).

By way of examples of nonpeptide libraries, a benzodiazepine library (see e.g., Bunin et al., Proc. Natl. Acad. Sci. USA 91:4708-4712 (1994)) can be adapted for use. Peptoid libraries (Simon et al., Proc. Natl. Acad. Sci. USA 89:9367-9371 (1992)) can also be used. Another example of a library that can be used, in which the amide functionalities in peptides have been permethylated to generate a chemically transformed combinatorial library, is described by Ostresh et al. (Proc. Natl. Acad. Sci. USA 91:11138-11142 (1994)).

The variety of non-peptide libraries that are useful in the present invention is great. For example, Ecker and Crooke (Bio/Technology 13:351-360 (1995)) list benzodiazepines, hydantoins, piperazinediones, biphenyls, sugar analogs, beta-mercaptoketones, arylacetic acids, acylpiperidines, benzopyrans, cubanes, xanthines, aminimides, and oxazolones as among the chemical species that form the basis of various libraries.

Non-peptide libraries can be classified broadly into two types: decorated monomers and oligomers. Decorated monomer libraries employ a relatively simple scaffold structure upon which a variety functional groups is added. Often the scaffold will be a molecule with a known useful pharmacological activity. For example, the scaffold might be the benzodiazepine structure.

Non-peptide oligomer libraries utilize a large number of monomers that are assembled together in ways that create new shapes that depend on the order of the monomers. Among the monomer units that have been used are carbamates, pyrrolinones, and morpholinos. Peptoids, peptide-like oligomers in which the side chain is attached to the alpha amino group rather than the alpha carbon, form the basis of another version of non-peptide oligomer libraries. The first non-peptide oligomer libraries utilized a single type of monomer and thus contained a repeating backbone. Recent libraries have utilized more than one monomer, giving the libraries added flexibility.

Screening the libraries can be accomplished by any of a variety of commonly known methods. See, e.g., the following references, which disclose screening of peptide

libraries: Parmley et al., *Adv. Exp. Med. Biol.* 251:215-218 (1989); Scott et al., *Science* 249:386-390 (1990); Fowlkes et al., *BioTechniques* 13:422-427 (1992); Oldenburg et al., *Proc. Natl. Acad. Sci. USA* 89:5393-5397 (1992); Yu et al., *Cell* 76:933-945 (1994); Staudt et al., *Science* 241:577-580 (1988); Bock et al., *Nature* 355:564-566 (1992); Tuerk et al., *Proc. Natl. Acad. Sci. USA* 89:6988-6992 (1992); Ellington et al., *Nature* 355:850-852 (1992); U.S. Pat. No. 5,096,815, U.S. Pat. No. 5,223,409, and U.S. Pat. No. 5,198,346, all to Ladner et al.; Rebar et al., *Science* 263:671-673 (1993); and PCT Publication No. WO 94/18318.

In a specific embodiment, screening to identify a molecule that binds an albumin fusion protein of the invention can be carried out by contacting the library members with an albumin fusion protein of the invention immobilized on a solid phase and harvesting those library members that bind to the albumin fusion protein. Examples of such screening methods, termed "panning" techniques are described by way of example in Parmley et al., *Gene* 73:305-318 (1988); Fowlkes et al., *BioTechniques* 13:422-427 (1992); PCT Publication No. WO 94/18318; and in references cited herein.

In another embodiment, the two-hybrid system for selecting interacting proteins in yeast (Fields et al., *Nature* 340:245-246 (1989); Chien et al., *Proc. Natl. Acad. Sci. USA* 88:9578-9582 (1991)) can be used to identify molecules that specifically bind to polypeptides of the invention.

Where the binding molecule is a polypeptide, the polypeptide can be conveniently selected from any peptide library, including random peptide libraries, combinatorial peptide libraries, or biased peptide libraries. The term "biased" is used herein to mean that the method of generating the library is manipulated so as to restrict one or more parameters that govern the diversity of the resulting collection of molecules, in this case peptides.

Thus, a truly random peptide library would generate a collection of peptides in which the probability of finding a particular amino acid at a given position of the peptide is the same for all 20 amino acids. A bias can be introduced into the library, however, by specifying, for example, that a lysine occur every fifth amino acid or that positions 4, 8, and 9 of a decapeptide library be fixed to include only arginine. Clearly, many types of biases can be contemplated, and the present invention is not restricted to any particular bias. Furthermore, the present invention contemplates specific types of peptide libraries,



such as phage displayed peptide libraries and those that utilize a DNA construct comprising a lambda phage vector with a DNA insert.

As mentioned above, in the case of a binding molecule that is a polypeptide, the polypeptide may have about 6 to less than about 60 amino acid residues, preferably about 5 6 to about 10 amino acid residues, and most preferably, about 6 to about 22 amino acids. In another embodiment, a binding polypeptide has in the range of 15-100 amino acids, or 20-50 amino acids.

The selected binding polypeptide can be obtained by chemical synthesis or recombinant expression.

10

### **Other Activities**

An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention, may be employed in treatment for stimulating re-vascularization of ischemic tissues due to various disease conditions such as thrombosis, arteriosclerosis, and other cardiovascular conditions. The albumin fusion proteins of the invention and/or polynucleotides encoding albumin fusion proteins of the invention may also be employed to stimulate angiogenesis and limb regeneration, as discussed above. 15

An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also be employed for treating wounds due to 20 injuries, burns, post-operative tissue repair, and ulcers since they are mitogenic to various cells of different origins, such as fibroblast cells and skeletal muscle cells, and therefore, facilitate the repair or replacement of damaged or diseased tissue.

An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also be employed stimulate neuronal growth and to treat and prevent neuronal damage which occurs in certain neuronal disorders or neuro-degenerative conditions such as Alzheimer's disease, Parkinson's disease, and AIDS-related complex. An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may have the ability to stimulate chondrocyte growth, therefore, they may be employed to enhance bone and periodontal 25 regeneration and aid in tissue transplants or bone grafts. 30

An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also be employed to prevent skin aging due

to sunburn by stimulating keratinocyte growth.

An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also be employed for preventing hair loss, since FGF family members activate hair-forming cells and promotes melanocyte growth.

5 Along the same lines, an albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may be employed to stimulate growth and differentiation of hematopoietic cells and bone marrow cells when used in combination with other cytokines.

10 An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also be employed to maintain organs before transplantation or for supporting cell culture of primary tissues. An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also be employed for inducing tissue of mesodermal origin to differentiate in early embryos.

15 An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also increase or decrease the differentiation or proliferation of embryonic stem cells, besides, as discussed above, hematopoietic lineage.

20 An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also be used to modulate mammalian characteristics, such as body height, weight, hair color, eye color, skin, percentage of adipose tissue, pigmentation, size, and shape (e.g., cosmetic surgery). Similarly, an albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may be used to modulate mammalian metabolism affecting catabolism, anabolism, processing, utilization, and storage of energy.

25 An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may be used to change a mammal's mental state or physical state by influencing biorhythms, cardiac rhythms, depression (including depressive disorders), tendency for violence, tolerance for pain, reproductive capabilities (preferably by Activin or Inhibin-like activity), hormonal or endocrine levels, appetite, 30 libido, memory, stress, or other cognitive qualities.

An albumin fusion protein of the invention and/or polynucleotide encoding an albumin fusion protein of the invention may also be used as a food additive or

preservative, such as to increase or decrease storage capabilities, fat content, lipid, protein, carbohydrate, vitamins, minerals, cofactors or other nutritional components.

The above-recited applications have uses in a wide variety of hosts. Such hosts include, but are not limited to, human, murine, rabbit, goat, guinea pig, camel, horse, mouse, rat, hamster, pig, micro-pig, chicken, goat, cow, sheep, dog, cat, non-human primate, and human. In specific embodiments, the host is a mouse, rabbit, goat, guinea pig, chicken, rat, hamster, pig, sheep, dog or cat. In preferred embodiments, the host is a mammal. In most preferred embodiments, the host is a human.

Having generally described the invention, the same will be more readily understood by reference to the following examples, which are provided by way of illustration and are not intended as limiting.

Without further description, it is believed that one of ordinary skill in the art can, using the preceding description and the following illustrative examples, make and utilize the alterations detected in the present invention and practice the claimed methods. The following working examples therefore, specifically point out preferred embodiments of the present invention, and are not to be construed as limiting in any way the remainder of the disclosure.

## EXAMPLES

### *Example 1: Preparation of HA-hGH Fusion Proteins*

An HA-hGH fusion protein was prepared as follows:

#### Cloning of hGH cDNA

The hGH cDNA was obtained from a human pituitary gland cDNA library (catalogue number HL1097v, Clontech Laboratories, Inc) by PCR amplification. Two oligonucleotides suitable for PCR amplification of the hGH cDNA, HGH1 and HGH2, were synthesized using an Applied Biosystems 380B Oligonucleotide Synthesizer.

HGH1: 5' - CCCAAGAATTCCTTATCCAGGC - 3' (SEQ ID NO: 1)

HGH2: 5' - GGGAAGCTTAGAAGCCACAGGATCCCTCCACAG - 3' (SEQ ID

NO: 2)

HGH 1 and HGH2 differed from the equivalent portion of the hGH cDNA sequence (Martial *et. al.*, 1979) by two and three nucleotides, respectively, such that after PCR amplification an *EcoRI* site would be introduced to the 5' end of the cDNA and a  
5 *BamHI* site would be introduced into the 3' end of the cDNA. In addition, HGH2 contained a *HindIII* site immediately downstream of the hGH sequence.

PCR amplification using a Perkin-Elmer-Cetus Thermal Cycler 9600 and a Perkin-Elmer-Cetus PCR kit, was performed using single-stranded DNA template-isolated from the phage particles of the cDNA library as follows: 10  $\mu$ L phage-particles were lysed  
10 by the addition of 10  $\mu$ L phage lysis buffer (280  $\mu$ g/mL proteinase K in TE buffer) and incubation at 55°C for 15 min followed by 85°C for 15 min. After a 1 min. incubation on ice, phage debris was pelleted by centrifugation at 14,000 rpm for 3 min. The PCR mixture contained 6  $\mu$ L of this DNA template, 0.1  $\mu$ M of each primer and 200  $\mu$ M of each deoxyribonucleotide. PCR was carried out for 30 cycles, denaturing at 94°C for 30 s,  
15 annealing at 65°C for 30 s and extending at 72°C for 30 s, increasing the extension time by 1 s per cycle.

Analysis of the reaction by gel electrophoresis showed a single product of the expected size (589 base pairs).

The PCR product was purified using Wizard PCR Preps DNA Purification System  
20 (Promega Corp) and then digested with *EcoRI* and *HindIII*. After further purification of the *EcoRI-HindIII* fragment by gel electrophoresis, the product was cloned into pUC19 (GIBCO BRL) digested with *EcoRI* and *HindIII*, to give pHGH1. DNA sequencing of the *EcoRI HindIII* region showed that the PCR product was identical in sequence to the hGH sequence (Martial *et. al.*, 1979), except at the 5' and 3' ends, where the *EcoRI* and *BamHI*  
25 sites had been introduced, respectively.

#### *Expression of the hGH cDNA.*

The polylinker sequence of the phagemid pBluescribe (+) (Stratagene) was replaced by inserting an oligonucleotide linker, formed by annealing two 75-mer  
30 oligonucleotides, between the *EcoRI* and *HindIII* sites to form pBST(+). The new polylinker included a unique *NotI* site.

The *NotI* HA expression cassette of pAYE309 (EP 431 880) comprising the PRBI

promoter, DNA encoding the HA/MF -I hybrid leader sequence, DNA encoding HA and the ADH1 terminator, was transferred to pBST(+) to form pHA1. The HA coding sequence was removed from this plasmid by digestion with HindIII followed by religation to form pHA2.

5 Cloning of the hGH cDNA, as described in Example 1, provided the hGH coding region lacking the pro-hGH sequence and the first 8 base pairs (bp) of the mature hGH sequence. In order to construct an expression plasmid for secretion of hGH from yeast, a yeast promoter, signal peptide and the first 8 bp of the hGH sequence were attached to the 5' end of the cloned hGH sequence as follows: The *HindIII*-*Sfa*NI fragment from pHA 1  
10 was attached to the 5' end of the *Eco*RI/*HindIII* fragment from pHGHI via two synthetic oligonucleotides, HGH3 and HGH4 (which can anneal to one another in such a way as to generate a double stranded fragment of DNA with sticky ends that can anneal with *Sfa*NI and *Eco*RI sticky ends):

HGH3: 5' - GATAAAGATTCCCAAC - 3' (SEQ ID NO: 3)

15 HGH4: 5' - AATTGTTGGGAATCTTT - 3' (SEQ ID NO: 4)

The *HindIII* fragment so formed was cloned into *HindIII*-digested pHA2 to make pHGH2, such that the hGH cDNA was positioned downstream of the PRBI promoter and HA/MF -1 fusion leader sequence (WO 90/01063). The *Not*I expression cassette contained in pHGH2, which included the *ADH1* terminator downstream of the hGH  
20 cDNA, was cloned into *Not*I-digested pSAC35 (Sleep *et al.*, BioTechnology 8:42 (1990)) to make pHGH12. This plasmid comprised the entire 2 µm plasmid to provide replication functions and the LEU2 gene for selection of transformants.

pHGH12 was introduced into *S. cerevisiae* D88 by transformation and individual transformants were grown for 3 days at 30°C in 10 mL YEPD (1% w/v yeast extract, 2 %  
25 w/v, peptone, 2 % w/v, dextrose).

After centrifugation of the cells, the supernatants were examined by SDS-polyacrylamide gel electrophoresis (SDS-PAGE) and were found to contain protein which was of the expected size and which was recognized by anti-hGH antiserum (Sigma, Poole, UK) on Western blots.

#### 30 *Cloning and expression of an HA-hGH fusion protein.*

In order to fuse the HA cDNA to the 5' end of the hGH cDNA, the pHA1

*HindIII*-*Bsu361* fragment (containing most of the *HA* cDNA) was joined to the pHGH1 *EcoRI*-*HindIII* fragment (containing most of the hGH cDNA) via two oligonucleotides, HGH7 and HGH8

HGH7: 5' - TTAGGCTTATTCCCAAC 3' (SEQ ID NO: 5)

5 HGH8: 5' - AATTGTTGGGAATAAGCC 3' (SEQ ID NO: 6)

The *HindIII* fragment so formed was cloned into pHA2 digested with *HindIII* to make pHGH10, and the *NotI* expression cassette of this plasmid was cloned into *NotI*-digested pSAC35 to make pHGH16.

10 pHGH16 was used to transform *S. cerevisiae* D88 and supernatants of cultures were analyzed as described above. A predominant band was observed that had a molecular weight of approximately 88 kD, corresponding to the combined masses of HA and hGH. Western blotting using anti-*HA* and anti-hGH antisera (Sigma) confirmed the presence of the two constituent parts of the albumin fusion protein.

15 The albumin fusion protein was purified from culture supernatant by cation exchange chromatography, followed by anion exchange and gel permeation chromatography. Analysis of the N-terminus of the protein by amino acid sequencing confirmed the presence of the expected albumin sequence.

20 An *in vitro* growth hormone activity assay (Ealey *et al.*, Growth Regulation 5:36 (1995)) indicated that the albumin fusion protein possessed full hGH activity. In a hypophysectomised rat weight gain model, performed essentially as described in the European Pharmacopoeia (1987, monograph 556), the fusion molecule was more potent than hGH when the same number of units of activity (based on the above *in vitro* assay) were administered daily. Further experiments in which the albumin fusion protein was administered once every four days showed a similar overall growth response to a daily  
25 administration of hGH. Pharmacokinetic experiments in which <sup>125</sup>I- labeled protein was administered to rats indicated an approximately ten-fold increase in circulatory half-life for the albumin fusion protein compared to hGH.

30 A similar plasmid was constructed in which DNA encoding the *S. cerevisiae* invertase (SUC2) leader sequence replaced the sequence for the hybrid leader, such that the encoded leader and the junction (↓) with the HA sequence were as follows:

... MLLQAFLFLAGFAAKISA ↓ DAHKS ..... (SEQ ID NO: 7) Invertase leader  
HA sequence ...

On introduction into *S. cerevisiae* DBI, this plasmid directed the expression and secretion of the albumin fusion protein at a level similar to that obtained with pHGH16. Analysis of the N-terminus of the albumin fusion protein indicated precise and efficient  
5 cleavage of the leader sequence from the mature protein.

*Cloning and expression of an hGH-HA fusion protein.*

In order to fuse the hGH cDNA to the 5' end of the HA cDNA, the HA cDNA was first altered by site-directed mutagenesis to introduce an *Eco*NI site near the 5' end of the  
10 coding region. This was done by the method of Kunkel *et al.* (Methods in Enzymol. 154:367 (1987)) using single-stranded DNA template prepared from pHAI and a synthetic oligonucleotide, LEU4:

LEU4: 5' - GAGATGCACACCTGAGTGAGG - 3' (SEQ ID NO: 8)

Site-directed mutagenesis using this oligonucleotide changed the coding sequence  
15 of the HA cDNA from Lys4 to Leu4 (K4L). However, this change was repaired when the hGH cDNA was subsequently joined at the 5' end by linking the pHGH2 *Not*I-*Bam*HI fragment to the *Eco*NI-*Not*I fragment of the mutated pHAI, via the two oligonucleotides HGH5 and HGH6:

HGH5: 5' - GATCCTGTGGCTTCGATGCACACAAGA - 3' (SEQ ID NO: 9)

20 HGH6: 5' - CTCTTGTGTGCATCGAAGCCACAG - 3' (SEQ ID NO: 10)

The *Not*I fragment so formed was cloned into *Not*I-digested pSAC35 to make pHGH14. pHGH14 was used to transform *S. cerevisiae* D88 and supernatants of culture were analyzed as above. A predominant band was observed that had a molecular weight of approximately 88 kD, corresponding to the combined masses of hGH and HA. Western  
25 blotting using anti-HA and anti-hGH antisera confirmed the presence of the two constituent parts of the albumin fusion protein.

The albumin fusion protein was purified from culture supernatant by cation exchange chromatography, followed by anion exchange and gel permeation chromatography. Analysis of the N-terminus of the protein by amino acid sequencing  
30 confirmed the presence of the expected hGH sequence.

*In vitro* studies showed that the albumin fusion protein retained hGH activity, but was significantly less potent than an albumin fusion protein comprising full length HA

(1-585) as the N-terminal portion and hGH as the C-terminal portion, as described above.

*Construction of plasmids for the expression of hGH fusions to domains of HA.*

Fusion polypeptides were made in which the hGH molecule was fused to the first two domains of HA (residues 1 to 387). Fusion to the N terminus of hGH was achieved by joining the pHA1 *HindIII*-*SapI* fragment, which contained most of the coding sequence for domains 1 and 2 of HA, to the pHGHI *EcoRI*-*HindIII* fragment, via the oligonucleotides HGH 11 and HGH 12:

HGH11: 5' - TGTGGAAGAGCCTCAGAATTTATTCCCAAC - 3' (SEQ ID NO:

10 11)

HGH12: 5' - AATTGTTGGAATAAATTCTGAGGCTCTTCC - 3' (SEQ ID NO: 12)

The *HindIII* fragment so formed was cloned into *HindIII*-digested pHA2 to make pHGH37 and the *NotI* expression cassette of this plasmid was cloned into *NotI*-digested pSAC35.

The resulting plasmid, pHGH38, contained an expression cassette that was found to direct secretion of the fusion polypeptide into the supernatant when transformed into *S. cerevisiae* DB 1. Western blotting using anti-*HA* and anti-hGH antisera confirmed the presence of the two constituent parts of the albumin fusion protein.

The albumin fusion protein was purified from culture supernatant by cation exchange chromatography followed by gel permeation chromatography.

*In vivo* studies with purified protein indicated that the circulatory half-life was longer than that of hGH, and similar to that of an albumin fusion protein comprising full-length HA (1-585) as the N-terminal portion and hGH as the C-terminal portion, as described above. *In vitro* studies showed that the albumin fusion protein retained hGH activity.

Using a similar strategy as detailed above, an albumin fusion protein comprising the first domain of HA (residues 1-194) as the N-terminal portion and hGH as the C-terminal portion, was cloned and expressed in *S. cerevisiae* DBL. Western blotting of culture supernatant using anti-*HA* and anti-hGH antisera confirmed the presence of the two constituent parts of the albumin fusion protein.



*Fusion of HA to hGH using a flexible linker sequence*

Flexible linkers, comprising repeating units of [Gly-Gly-Gly-Gly-Ser]<sub>n</sub>, where n was either 2 or 3, were introduced between the HA and hGH albumin fusion protein by cloning of the oligonucleotides HGH16, HGH17, HGH18 and HGH19:

5 HGH16: 5'-TTAGGCTTAGGTGGCGGTGGATCCGGCGGTGGTGGATCTTTC  
CCA AC-3' (SEQ ID NO: 13)

HGH17: 5'-AATTGTTGGGAAAGATCCACCACCGCCGGATCCACCGCCACC  
TAAGCC-3' (SEQ ID NO: 14)

10 HGH18: 5'-TTAGGCTTAGGCGGTGGTGGATCTGGTGGCGGCGGATCTGGT  
GGCGGTGGATCCTTCCCAAC-3' (SEQ ID NO: 15)

HGH19:  
5'-AATTGTTGGGAAAGGATCCACCGCCACCAGATCCGCGCCACCA  
GATCCACCACCGCCTAAGCC-3' (SEQ ID NO: 16)

15 Annealing of HGH16 with HGH17 resulted in n=2, while HGH18 annealed to  
HGH19 resulted in n=3. After annealing, the double-stranded oligonucleotides were  
cloned with the *EcoRI*-*Bsu361* fragment isolated from pHGH1 into *Bsu361*-digested  
pHGH10 to make pHGH56 (where n=2) and pHGH57 (where n=3). The *NotI* expression  
cassettes from these plasmids were cloned into *NotI*-digested pSAC35 to make pHGH58  
and pHGH59, respectively.

20 Cloning of the oligonucleotides to make pHGH56 and pHGH57 introduced a  
*Bam*HI site in the linker sequences. It was therefore possible to construct linker sequences  
in which n=1 and n = 4, by joining either the *Hind*III-*Bam*HI fragment from pHGH56 to  
the *Bam*HI-*Hind*III fragment from pHGH57 (making n = 1), or the *Hind*III-*Bam*HI  
fragment from pHGH57 to the *Bam*HI-*Hind*III fragment from pHGH56 (making n=2).  
25 Cloning of these fragments into the *Hind*III site of pHA2, resulted in pHGH60 (n= 1) and  
pHGH61 (n=4). The *NotI* expression cassettes from pHGH60 and pHGH61 were cloned  
into *NotI*-digested pSAC35 to make pHGH62 and pHGH63, respectively.

Transformation of *S. cerevisiae* with pHGH58, pHGH59, pHGH62 and pHGH63  
resulted in transformants that secreted the fusion polypeptides into the supernatant.  
30 Western blotting using anti-HA and anti-hGH antisera confirmed the presence of the two  
constituent parts of the albumin fusion proteins.

The albumin fusion proteins were purified from culture supernatant by cation

exchange chromatography, followed by anion exchange and gel permeation chromatography. Analysis of the N-termini of the proteins by amino acid sequencing confirmed the presence of the expected albumin sequence. Analysis of the purified proteins by electrospray mass spectrometry confirmed an increase in mass of 315 D (n=1),  
5 630 D (n=2), 945 D (n=3) and 1260 D (n=4) compared to the HA-hGH fusion protein described above. The purified protein was found to be active *in vitro*.

Increased Shelf-Life of HA-hGH fusion proteins: Methods

HA-hGH and hGH were separately diluted in cell culture media containing 5%  
10 horse serum to final concentrations of 100-200 µg/ml and incubated at 4, 37 or 50°C. At time zero and at weekly intervals thereafter, aliquots of the samples were tested for their biological activity in the Nb2 cell proliferation assay, and the data normalized to the biological activity of the control (hGH solution at time zero). In other assays hGH and HA-hGH were incubated in phosphate buffer saline in at 4, 37 and 50 degree C.

15 Nb2 cell proliferation assay: The growth of these cells is dependent on hGH or other lactogenic hormones. In a typical experiment  $10^4$  cells /well are plated in 96-well plate in the presence of different concentration of hGH or HA-hGH in media such as DMEM containing 5-10% horse serum for 24-48 hrs in the incubator. After the incubation period, 1:10 volume of MTT (5mg/ml in H<sub>2</sub>O) is added to each well and the plate is  
20 incubated for a further 6-16 hrs. The growing cells convert MTT to insoluble formazan. The formazan is solubilized by acidic isopropanol, and the color produced is measured at 570 nm on microtiter plate reader. The extent of formazan formation reflects the level of cellular proliferation.

25 Increased shelf-life of HA-hGH fusion proteins: Results

The fusion of Therapeutic proteins to albumin confers stability in aqueous or other solution. Figure 1 depicts the extended shelf-life of an HA fusion protein in terms of the biological activity of HA-hGH remaining after storage in cell culture media for up to 5 weeks at 37°C. A solution of 200 µg/ml HA-hGH was prepared in tissue culture media  
30 containing 5% horse serum, and the solution incubated at 37°C starting at time zero. At the indicated times, a sample was removed and tested for its biological activity in the Nb2 cell assay, at 2 ng/ml final concentration. As shown in Figure 1, the biological activity of

HA-hGH remains essentially intact (within experimental variation) after 5 weeks of incubation at 37°C. The recombinant hGH used as control for this experiment lost its biological activity in the first week of the experiment.

Figure 2 shows the stability of HA-hGH after storage in cell culture media for up to 3 weeks at 4, 37, or 50°C. At time zero, a solution of HA-hGH was prepared in tissue culture media containing 5% horse serum, and incubated at 4, 37, and 50°C. At the indicated periods a sample was removed and assayed for its biological activity in the Nb2 cell proliferation assay, at 60 ng/ml final concentration. HA-hGH retains over 90% of its initial activity at all temperatures tested for at least 3 weeks after incubation while hGH loses its biological activity within the first week. This level of activity is further retained for at least 7 weeks at 37°C and 5 weeks at 50°C. These results indicate that HA-hGH is highly stable in aqueous solution even under temperature stress.

Figures 3A and 3B show the stable biological activity of HA-hGH compared to hGH in the Nb2 cell proliferation assay. Nb2 cells were grown in the presence of increasing concentrations of recombinant hGH or HA-hGH, added at time zero. The cells were incubated for 24 or 48 hours before measuring the extent of proliferation by the MTT method. The increased stability of HA-hGH in the assay results in essentially the same proliferative activity at 24 hours (Figure 3A) as at 48 hours (Figure 3B) while hGH shows a significant reduction in its proliferative activity after 48 hours of incubation (Figures 3A and 3B). Compared to hGH, the HA-hGH has lower biological potency after 1 day; the albumin fusion protein is about 5 fold less potent than hGH. However, after 2 days the HA-hGH shows essentially the same potency as hGH due to the short life of hGH in the assay. This increase in the stability of the hGH as an albumin fusion protein has a major unexpected impact on the biological activity of the protein. Although the potency of the albumin fusion proteins is slightly lower than the unfused counterparts in rapid bioassays, their biological stability results in much higher biological activity in the longer term *in vitro* assay or *in vivo* assays.

#### ***Example 2: Preparation of HA-fusion proteins.***

Figure 4 shows a map of a plasmid (pPPC0005) that can be used as the base vector for cloning the cDNAs of therapeutic partners to form HA-fusions. For example, digestion of this vector with the restriction enzymes *Bsu36I*/Partial *HindIII* will allow for

the insertion of a cDNA modified at the 5' end to encode the last 5 amino acids of HA including the *Bsu36I* site and at the 3' end to include a double stop codon and *HindIII* site.

As another example, digestion of this vector with the restriction enzymes *Bsu36I*, *SphI* allows for the insertion of a cDNA modified at the 5' end to encode the last 5 amino acids  
 5 of HA including the *Bsu36I* site and at the 3' end to include a double stop codon, *HindIII* site and the *ADHI* terminator sequence up to and including the *SphI* site.

This plasmid may easily be modified by one of skill in the art, for example, to modify, add or delete restriction sites so that one may more easily clone a Therapeutic protein, or fragment or variant of into the vector for the purpose of making an albumin  
 10 fusion protein of the invention.

For example, for the purpose of making an albumin fusion protein where the Therapeutic moiety is placed N-terminal to the (mature) albumin protein, restriction sites were added at the 5' end of the DNA encoding HA in pPPC0005 shown in Figure 4).

15 Because it was desired to add unique *XhoI* and *ClaI* sites at the 5' end of the DNA encoding the HA protein in pPPC0005, it was first necessary to remove those same sites from the plasmid (located 3' of the *ADH1* terminator sequence). This was accomplished by cutting pPPC0005 with *XhoI* and *ClaI*, filling in the sticky ends with T4 DNA polymerase, and religating the blunt ends to create pPPC0006

20 Engineering the *Xho* and *Cla I* restriction sites into the Fusion leader sequence just 5' of the DNA encoding the HA protein in pPPC0006 was accomplished using two rounds of PCR. The first pair of oligonucleotides are those of SEQ ID NO:19 and SEQ ID NO:20. SEQ ID 19 contains four point mutations relative to the DNA sequence encoding the Fusion leader sequence and the beginning of the HA protein. These mutations are  
 25 necessary to create the *XhoI* site in the fusion leader sequence and the *Cla I* site just at the beginning of the DNA encoding the HA protein. These four mutations are underlined in the sequence shown below. In pPPC0006 the nucleotides at these four positions from 5' to 3' are T, G, T, and G.  
 5'-GCCTCGAGAAAAGAGATGCACACAAGAGTGAGGTTGCTCATCGATTAAAG  
 30 ATTTGGG-3' (SEQ ID NO:19)  
 5'-AATCGATGAGCAACCTCACTCTTGTGTGCATCTCTTTTCTCGAGGCTCCTGG  
 AATAAGC-3' (SEQ ID NO:20). A second round of PCR is then performed with an

upstream flanking primer, 5'-TACAAACTTAAGAGTCCAATTAGC-3' (SEQ ID NO:21) and a downstream flanking primer 5'-CACTTCTCTAGAGTGGTTTCATATGTCTT-3' (SEQ ID NO:22). The resulting PCR product is then purified and then digested with AflII and XbaI and ligated into the same sites in pPPC0006 creating pScCHSA. The resulting  
 5 plasmid will have an XhoI sites engineered into the fusion leader sequence. The presence of the XhoI site creates a single amino acid change in the end of fusion leader sequence from LDKR to LEKR. The D to E change will not be present in the final albumin fusion protein expression plasmid if one ligates into the XhoI and Cla I sites a fragment comprising the Therapeutic moiety which has a 5' Sall sticky end (which is compatible  
 10 with the XhoI end) and a 3' ClaI end. Ligation of the XhoI to the Sall restores the original amino acid sequence of the Fusion leader sequence. The therapeutic protein moiety may be inserted after the Kex2 site (Kex2 cleaves after the dibasic amino acid sequence KR at the end of the Fusion leader sequence) and before the ClaI site.

In addition, for the purpose of making an albumin fusion protein where the  
 15 Therapeutic moiety is placed C-terminal to the (mature) albumin protein, four, eight-base-pair restriction sites were added at the 3' end of the DNA encoding HA in pScCHSA. As an example, it was felt to be desirable to incorporate AscI, FseI, and PmeI restriction sites in between the Bsu36I and HindIII sites at the end of the DNA encoding the HA protein in pScCHSA. This was accomplished through the use of two complementary synthetic  
 20 oligonucleotides (SEQ ID NO:19 and SEQ ID NO:20) which contain the desired restriction sites.

5'-AAGCTGCCTTAGGCTTATAATAAGGCGCGCCGGCCGGCCGTTTAAACTAAG  
 CTTAATTCT-3' (SEQ ID NO:23) and

5-AGAATTAAGCTTAGTTTAAACGGCCGGCCGGCGCGCCTTATTATAAGCCTAA  
 25 GGCAGCTT-3' (SEQ ID NO:24). These oligonucleotides may be annealed and digested with Bsu36I and HindIII and ligated into the same sites located at the end of the DNA encoding the HA protein in pScCHSA creating pScNHSA, using techniques known in the art.

30 *Making vectors comprising albumin fusion proteins where the albumin moiety is N-terminal to the Therapeutic moiety.*

The DNA encoding the Therapeutic moiety may be PCR amplified using primers

that will add DNA encoding the last five amino acids of the HA (and containing the Bsu36I site) onto the 5' end of the DNA encoding a Therapeutic protein and a STOP codon and appropriate cloning sites onto the 3' end of the coding sequence. For instance, the forward primer used to amplify the DNA encoding a therapeutic protein might have the sequence, 5'-aagctGCCTTAGGCTTA(N)<sub>15</sub>-3' (SEQ ID NO:25) where the underlined sequence is a Bsu36I site, the upper case nucleotides encode the last four amino acids of the mature HA protein (ALGL), and (N)<sub>15</sub> is identical to the first 15 nucleotides encoding the Therapeutic protein of interest. Similarly, the reverse primer used to amplify the DNA encoding a therapeutic protein might have the sequence, 5'-GCGCGCGTTTAAACGGCCGGCCGGCGCGCCTTATTA(N)<sub>15</sub>-3' (SEQ ID NO:26) where the italicized nucleotides is a PmeI site, the double underlined nucleotides are a FseI site, the singly underlined text is a PmeI site, the boxed nucleotides are the reverse complement of two tandem stop codons, and (N)<sub>15</sub> is identical to the reverse complement of the last 15 nucleotides encoding the Therapeutic protein of interest. Once the PCR product is amplified it may be cut with Bsu36I and one of (AscI, FseI, or PmeI) and ligated into pScNHSA.

*Making vectors comprising albumin fusion proteins where the albumin moiety is N-terminal to the Therapeutic moiety.*

The DNA encoding the Therapeutic moiety may be PCR amplified using primers that will add DNA encoding the last three amino acids of the Fusion leader sequence (and containing a SalI site) onto the 5' end of the DNA encoding a Therapeutic protein and the first few amino acids of the HA (and containing a ClaI site. For instance, the forward primer used to amplify the DNA encoding a therapeutic protein might have the sequence, 5'-aggagcgtcGACAAAAGA(N)<sub>15</sub>-3' (SEQ ID NO:27) where the underlined sequence is a Sal I site, the upper case nucleotides encode the last three amino acids of the Fusion leader sequence (DKR), and (N)<sub>15</sub> is identical to the first 15 nucleotides encoding the Therapeutic protein of interest. Similarly, the reverse primer used to amplify the DNA encoding a therapeutic protein might have the sequence, 5'-CTTTAAATCGATGAGCAACCTCACTCTTGTGTGCATC(N)<sub>15</sub>-3' (SEQ ID NO:28) where the italicized nucleotides are a ClaI site, the underlined nucleotides are the reverse complement of the DNA encoding the first 9 amino acids of HA (DAHKSEVAH), and

(N)<sub>15</sub> is identical to the reverse complement of the last 15 nucleotides encoding the Therapeutic protein of interest. Once the PCR product is amplified it may be cut with SalI and ClaI and ligated into pScCHSA digested with XhoI and Cla I.

5 *Expression of an Albumin Fusion Protein in yeast.*

The Not I fragment containing the DNA encoding either an N-terminal or C-terminal albumin fusion protein generated from pScCHSA or pScNHSA may then be cloned in to the NotI site of pSAC35.

10 *Expression of an Albumin Fusion Protein from Mammalian cell lines*

The HSA gene has also been cloned into a the pC4 vector which is more suitable for mammalian culture systems creating plasmid pC4:HSA. More specifically, pC4HSA was generated by PCR amplifying the mature HSA gene with a 5' primer (SEQ ID NO:30) that anneals to the 5' end of DNA encoding the mature form of the HSA protein (e.g, DNA in plasmid pScCHSA), incorporates BamHI (Shown in italics below) and HindIII (shown singly underlined below) cloning sites, attaches a kozak sequence (shown double underlined below) and DNA encoding the natural HSA signal peptide (MKWVSFISLLFLFSSAYSRS�DKR, SEQ ID NO:29) (shown in bold below), and a 3' primer (SEQ ID NO:31) that anneals to the 3' end of DNA encoding the mature form of the HSA protein and incorporates an Asp718 restriction site (shown in bold below). The DNA encoding the natural human serum albumin leader sequence in SEQ ID NO:30 also contains a modification that introduces a XhoI site that is boxed below.

5'-TCAGGGATCCAAGCTTCCGCCACCATGAAGTGGGTAACCTTTATTTCCCTTC  
 25 TTTTCTCTTTAGCTCGGCTTA CTCGAGGGGTGTGTTTCGTCGAGATGCACACA  
 AGAGTGAG-3' (SEQ ID NO:30)

5"-GCAGCGGTACCGAATTCGGCGCGCCTTATAAGCCTAAGGCAGC-3' (SEQ ID NO:31)

30

This PCR product (1.85kb) is then purified and digested with BamHI and Asp718 and cloned into the same sites in pC4 (ATCC Accession No. 209646) to produce pC4:HSA

*Making vectors comprising albumin fusion proteins where the albumin moiety is C-terminal to the Therapeutic moiety using the pC4:HSA vector*

Using pC4:HSA, albumin fusion proteins in which the Therapeutic protein moiety is N terminal to the albumin sequence, one can clone DNA encoding a Therapeutic protein that has its own signal sequence between the Bam HI (or HindIII) and ClaI sites. When cloning into either the BamHI or Hind III site remember to include Kozak sequence (CCGCCACCATG) prior to translational start codon of DNA encoding the Therapeutic Protein to be subcloned. If the Therapeutic does not have a signal sequence, the DNA encoding that Therapeutic protein may be cloned in between the XhoI and ClaI sites. When using the XhoI site, the following 5' (SEQ ID NO:32) and 3' (SEQ IDNO:33) PCR primers may be used:

5'-CCGCCGCTCGAGGGGTGTGTTTCGTCGA(N)<sub>18</sub>-3' (SEQ ID NO: 32)

5'-AGTCCCATCGATGAGCAACCTCACTCTTGTGTGCATC(N)<sub>18</sub>-3' (SEQ ID NO:33)

In SEQ ID NO:32, the underlined sequence is an XhoI site; and the XhoI site and the DNA following the XhoI site encode for the last seven amino acids of the leader sequence of natural human serum albumin. In SEQ ID NO:33, the underlined sequence is a ClaI site; and the ClaI site and the DNA following it encode are the reverse complement of the DNA encoding the first 10 amino acids of themature HSA protein (SEQ ID NO:18).

In SEQ ID NO:32 "(N)<sub>18</sub>" is DNA identical to the first 18 nucleotides encoding the Therapeutic protein of interest.). In SEQ ID NO:33 "(N)<sub>18</sub>" is the reverse complement of DNA encoding the last 18 nucleotides encoding the Therapeutic protein of interest. Using these two primers, one may PCR amplify the Therapeutic protein of interest, purify the PCR product, digest it with XhoI and ClaI restriction enzymes and then and clone it into the with XhoI and ClaI sites in the pC4:HSA vector.

*Making vectors comprising albumin fusion proteins where the albumin moiety is N-terminal to the Therapeutic moiety using the pC4:HSA vector*

Using pC4:HSA, albumin fusion proteins in which the Therapeutic protein moiety is N terminal to the albumin sequence, one can clone DNA encoding a Therapeutic protein between the Bsu36I and AscI restriction sites. When cloning into the Bsu36I and AscI, the



same primer design used to clone in the yeast vector system (SEQ ID NO:25 and 26) may be employed.

The pC4 vector is especially suitable for expression of albumin fusion proteins from CHO cells. For expression, in other mammalian cell types, e.g., NSO cells, it may be useful to subclone the HindIII - EcoRI fragment containing the DNA encoding an albumin fusion protein (from a pC4 vector in which the DNA encoding the Therapeutic protein has already been cloned in frame with the DNA encoding (the mature form of) human serum albumin) into another expression vector (such as any of the mammalian expression vectors described herein).

***Example 3: Preparation of HA-cytokine or HA-growth factor fusion proteins (such as EPO, GMCSF, GCSF)***

The cDNA for the cytokine or growth factor of interest, such as EPO, can be isolated by a variety of means including from cDNA libraries, by RT-PCR and by PCR using a series of overlapping synthetic oligonucleotide primers, all using standard methods. The nucleotide sequences for all of these proteins are known and available, for instance, in U.S. Patents 4,703,008, 4,810,643 and 5,908,763. The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used, for cloning of the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus with or without the use of a spacer sequence. EPO (or other cytokine) cDNA is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA, or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast. The albumin fusion protein secreted from the yeast can then be collected and purified from the media and tested for its biological activity. For expression in mammalian cell lines, a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines.

***Example 4: Preparation of HA-IFN fusion proteins (such as IFN $\alpha$ )***

The cDNA for the interferon of interest such as IFN $\alpha$  can be isolated by a variety of means including but not exclusively, from cDNA libraries, by RT-PCR and by PCR using a series of overlapping synthetic oligonucleotide primers, all using standard methods. The nucleotide sequences for interferons, such as IFN $\alpha$  are known and available, for instance, in U.S. Patents 5,326,859 and 4,588,585, in EP 32 134, as well as in public databases such as GenBank. The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used to clone the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus of the HA sequence, with or without the use of a spacer sequence. The IFN $\alpha$  (or other interferon) cDNA is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA, or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast (see Figure 8). The albumin fusion protein secreted from the yeast can then be collected and purified from the media and tested for its biological activity. For expression in mammalian cell lines a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines.

#### Maximum protein recovery from vials

The albumin fusion proteins of the invention have a high degree of stability even when they are packaged at low concentrations. In addition, in spite of the low protein concentration, good fusion-protein recovery is observed even when the aqueous solution includes no other protein added to minimize binding to the vial walls. Figure 5 compares the recovery of vial-stored HA-IFN solutions with a stock solution. 6 or 30  $\mu\text{g/ml}$  HA-IFN solutions were placed in vials and stored at 4°C. After 48 or 72 hrs a volume originally equivalent to 10 ng of sample was removed and measured in an IFN sandwich ELISA. The estimated values were compared to that of a high concentration stock solution. As shown, there is essentially no loss of the sample in these vials, indicating that addition of exogenous material such as albumin is not necessary to prevent sample loss to the wall of the vials

*In vivo stability and bioavailability of HA- $\alpha$ -IFN fusions*

To determine the in vivo stability and bioavailability of a HA- $\alpha$ -IFN fusion molecule, the purified fusion molecule (from yeast) was administered to monkeys at the dosages and time points described in Figures 6 and 7. Pharmaceutical compositions formulated from HA- $\alpha$ -IFN fusions may account for the extended serum half-life and bioavailability exemplified in Figures 6 and 7. Accordingly, pharmaceutical compositions may be formulated to contain lower dosages of alpha-interferon activity compared to the native alpha-interferon molecule.

Pharmaceutical compositions containing HA- $\alpha$ -IFN fusions may be used to treat or prevent disease in patients with any disease or disease state that can be modulated by the administration of  $\alpha$ -IFN. Such diseases include, but are not limited to, hairy cell leukemia, Kaposi's sarcoma, genital and anal warts, chronic hepatitis B, chronic non-A, non-B hepatitis, in particular hepatitis C, hepatitis D, chronic myelogenous leukemia, renal cell carcinoma, bladder carcinoma, ovarian and cervical carcinoma, skin cancers, recurrent respirator papillomatosis, non-Hodgkin's and cutaneous T-cell lymphomas, melanoma, multiple myeloma, AIDS, multiple sclerosis, glioblastoma, etc. (see Interferon Alpha, In: AHFS Drug Information, 1997).

Accordingly, the invention includes pharmaceutical compositions containing a HA- $\alpha$ -IFN fusion protein, polypeptide or peptide formulated with the proper dosage for human administration. The invention also includes methods of treating patients in need of such treatment comprising at least the step of administering a pharmaceutical composition containing at least one HA- $\alpha$ -IFN fusion protein, polypeptide or peptide.

*Bifunctional HA- $\alpha$ -IFN fusions*

The HA- $\alpha$ -IFN expression vector of Figure 8 is modified to include an insertion for the expression of bifunctional HA- $\alpha$ -IFN fusion proteins. For instance, the cDNA for a second protein of interest may be inserted in frame downstream of the "rHA-IFN" sequence after the double stop codon has been removed or shifted downstream of the coding sequence.

In one version of a bifunctional HA- $\alpha$ -IFN fusion protein, an antibody or fragment against B-lymphocyte stimulator protein (GenBank Acc 4455139) or polypeptide may be fused to one end of the HA component of the fusion molecule. This bifunctional protein is

useful for modulating any immune response generated by the  $\alpha$ -IFN component of the fusion.

**Example 5: Preparation of HA-hormone fusion protein (such as insulin, LH, FSH)**

The cDNA for the hormone of interest such as insulin can be isolated by a variety of means including but not exclusively, from cDNA libraries, by RT-PCR and by PCR using a series of overlapping synthetic oligonucleotide primers, all using standard methods. The nucleotide sequences for all of these proteins are known and available, for instance, in public databases such as GenBank. The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used, for cloning of the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus with or without the use of a spacer sequence. The hormone cDNA is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA, or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast. The albumin fusion protein secreted from the yeast can then be collected and purified from the media and tested for its biological activity. For expression in mammalian cell lines a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines.

**Example 6: Preparation of HA-soluble receptor or HA-binding protein fusion protein such as HA-TNF receptor**

The cDNA for the soluble receptor or binding protein of interest such as TNF receptor can be isolated by a variety of means including but not exclusively, from cDNA libraries, by RT-PCR and by PCR using a series of overlapping synthetic oligonucleotide primers, all using standard methods. The nucleotide sequences for all of these proteins are known and available, for instance, in GenBank. The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used, for cloning of the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus with or without the use of a spacer sequence. The receptor cDNA is cloned

into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA , or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast. The albumin fusion protein secreted from the yeast can then be collected and purified from the media and tested for its biological activity. For expression in mammalian cell lines a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines.

***Example 7: Preparation of HA-growth factors such as HA-IGF-1 fusion protein***

The cDNA for the growth factor of interest such as IGF-1 can be isolated by a variety of means including but not exclusively, from cDNA libraries, by RT-PCR and by PCR using a series of overlapping synthetic oligonucleotide primers, all using standard methods (see GenBank Acc. No.NP\_000609). The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used, for cloning of the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus with or without the use of a spacer sequence. The growth factor cDNA is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA , or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast. The albumin fusion protein secreted from the yeast can then be collected and purified from the media and tested for its biological activity. For expression in mammalian cell lines a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines.

***Example 8: Preparation of HA-single chain antibody fusion proteins***

Single chain antibodies are produced by several methods including but not limited to: selection from phage libraries, cloning of the variable region of a specific antibody by cloning the cDNA of the antibody and using the flanking constant regions as the primer to

clone the variable region, or by synthesizing an oligonucleotide corresponding to the variable region of any specific antibody. The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used, for cloning of the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus with or without the use of a spacer sequence. The cell cDNA is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA, or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast.

In fusion molecules of the invention, the  $V_H$  and  $V_L$  can be linked by one of the following means or a combination thereof: a peptide linker between the C-terminus of the  $V_H$  and the N-terminus of the  $V_L$ ; a Kex2p protease cleavage site between the  $V_H$  and  $V_L$  such that the two are cleaved apart upon secretion and then self associate; and cystine residues positioned such that the  $V_H$  and  $V_L$  can form a disulphide bond between them to link them together (see Figure 14). An alternative option would be to place the  $V_H$  at the N-terminus of HA or an HA domain fragment and the  $V_L$  at the C-terminus of the HA or HA domain fragment.

The albumin fusion protein secreted from the yeast can then be collected and purified from the media and tested for its activity. For expression in mammalian cell lines a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines. The antibody produced in this manner can be purified from media and tested for its binding to its antigen using standard immunochemical methods.

#### ***Example 9: Preparation of HA-cell adhesion molecule fusion proteins***

The cDNA for the cell adhesion molecule of interest can be isolated by a variety of means including but not exclusively, from cDNA libraries, by RT-PCR and by PCR using a series of overlapping synthetic oligonucleotide primers, all using standard methods. The nucleotide sequences for the known cell adhesion molecules are known and available, for instance, in GenBank. The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used, for cloning of the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus with or

without the use of a spacer sequence. The cell adhesion molecule cDNA is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA, or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast. The albumin fusion protein  
5 secreted from the yeast can then be collected and purified from the media and tested for its biological activity. For expression in mammalian cell lines a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines.

10

***Example 10: Preparation of inhibitory factors and peptides as HA fusion proteins (such as HA-antiviral, HA-antibiotic, HA-enzyme inhibitor and HA-anti-allergic proteins)***

The cDNA for the peptide of interest such as an antibiotic peptide can be isolated  
15 by a variety of means including but not exclusively, from cDNA libraries, by RT-PCR and by PCR using a series of overlapping synthetic oligonucleotide primers, all using standard methods. The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used, for cloning of the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus with or without the use of a spacer  
20 sequence. The peptide cDNA is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA, or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast. The albumin fusion protein secreted from the yeast can then be collected and purified from the media and tested for its biological activity. For expression  
25 in mammalian cell lines a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines.

30

***Example 11: Preparation of targeted HA fusion proteins***

The cDNA for the protein of interest can be isolated from cDNA library or can be made synthetically using several overlapping oligonucleotides using standard molecular

biology methods. The appropriate nucleotides can be engineered in the cDNA to form convenient restriction sites and also allow the attachment of the protein cDNA to albumin cDNA similar to the method described for hGH. Also a targeting protein or peptide cDNA such as single chain antibody or peptides, such as nuclear localization signals, that can direct proteins inside the cells can be fused to the other end of albumin. The protein of interest and the targeting peptide is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA, or pC4:HSA which allows the fusion with albumin cDNA. In this manner both N- and C-terminal end of albumin are fused to other proteins. The fused cDNA is then excised from pPPC0005 and is inserted into a plasmid such as pSAC35 to allow the expression of the albumin fusion protein in yeast. All the above procedures can be performed using standard methods in molecular biology. The albumin fusion protein secreted from yeast can be collected and purified from the media and tested for its biological activity and its targeting activity using appropriate biochemical and biological tests.

#### *Example 12: Preparation of HA-enzymes fusions*

The cDNA for the enzyme of interest can be isolated by a variety of means including but not exclusively, from cDNA libraries, by RT-PCR and by PCR using a series of overlapping synthetic oligonucleotide primers, all using standard methods. The cDNA can be tailored at the 5' and 3' ends to generate restriction sites, such that oligonucleotide linkers can be used, for cloning of the cDNA into a vector containing the cDNA for HA. This can be at the N or C-terminus with or without the use of a spacer sequence. The enzyme cDNA is cloned into a vector such as pPPC0005 (Figure 4), pScCHSA, pScNHSA, or pC4:HSA from which the complete expression cassette is then excised and inserted into the plasmid pSAC35 to allow the expression of the albumin fusion protein in yeast. The albumin fusion protein secreted from the yeast can then be collected and purified from the media and tested for its biological activity. For expression in mammalian cell lines a similar procedure is adopted except that the expression cassette used employs a mammalian promoter, leader sequence and terminator (See Example 2). This expression cassette is then excised and inserted into a plasmid suitable for the transfection of mammalian cell lines.



**Example 13: Bacterial Expression of an Albumin Fusion Protein**

A polynucleotide encoding an albumin fusion protein of the present invention comprising a bacterial signal sequence is amplified using PCR oligonucleotide primers corresponding to the 5' and 3' ends of the DNA sequence, to synthesize insertion fragments. The primers used to amplify the polynucleotide encoding insert should preferably contain restriction sites, such as BamHI and XbaI, at the 5' end of the primers in order to clone the amplified product into the expression vector. For example, BamHI and XbaI correspond to the restriction enzyme sites on the bacterial expression vector pQE-9. (Qiagen, Inc., Chatsworth, CA). This plasmid vector encodes antibiotic resistance (Amp<sup>r</sup>), a bacterial origin of replication (ori), an IPTG-regulatable promoter/operator (P/O), a ribosome binding site (RBS), a 6-histidine tag (6-His), and restriction enzyme cloning sites.

The pQE-9 vector is digested with BamHI and XbaI and the amplified fragment is ligated into the pQE-9 vector maintaining the reading frame initiated at the bacterial RBS. The ligation mixture is then used to transform the E. coli strain M15/rep4 (Qiagen, Inc.) which contains multiple copies of the plasmid pREP4, which expresses the lacI repressor and also confers kanamycin resistance (Kan<sup>r</sup>). Transformants are identified by their ability to grow on LB plates and ampicillin/kanamycin resistant colonies are selected. Plasmid DNA is isolated and confirmed by restriction analysis.

Clones containing the desired constructs are grown overnight (O/N) in liquid culture in LB media supplemented with both Amp (100 ug/ml) and Kan (25 ug/ml). The O/N culture is used to inoculate a large culture at a ratio of 1:100 to 1:250. The cells are grown to an optical density 600 (O.D.<sup>600</sup>) of between 0.4 and 0.6. IPTG (Isopropyl-B-D-thiogalacto pyranoside) is then added to a final concentration of 1 mM. IPTG induces by inactivating the lacI repressor, clearing the P/O leading to increased gene expression.

Cells are grown for an extra 3 to 4 hours. Cells are then harvested by centrifugation (20 mins at 6000Xg). The cell pellet is solubilized in the chaotropic agent 6 Molar Guanidine HCl or preferably in 8 M urea and concentrations greater than 0.14 M 2-mercaptoethanol by stirring for 3-4 hours at 4°C (see, e.g., Burton et al., Eur. J. Biochem. 179:379-387 (1989)). The cell debris is removed by centrifugation, and the supernatant containing the polypeptide is loaded onto a nickel-nitrilo-tri-acetic acid ("Ni-NTA")

affinity resin column (available from QIAGEN, Inc., *supra*). Proteins with a 6 x His tag bind to the Ni-NTA resin with high affinity and can be purified in a simple one-step procedure (for details see: The QIAexpressionist (1995) QIAGEN, Inc., *supra*).

Briefly, the supernatant is loaded onto the column in 6 M guanidine-HCl, pH 8.  
5 The column is first washed with 10 volumes of 6 M guanidine-HCl, pH 8, then washed with 10 volumes of 6 M guanidine-HCl pH 6, and finally the polypeptide is eluted with 6 M guanidine-HCl, pH 5.

The purified protein is then renatured by dialyzing it against phosphate-buffered saline (PBS) or 50 mM Na-acetate, pH 6 buffer plus 200 mM NaCl. Alternatively, the  
10 protein can be successfully refolded while immobilized on the Ni-NTA column. Exemplary conditions are as follows: renature using a linear 6M-1M urea gradient in 500 mM NaCl, 20% glycerol, 20 mM Tris/HCl pH 7.4, containing protease inhibitors. The renaturation should be performed over a period of 1.5 hours or more. After renaturation the proteins are eluted by the addition of 250 mM imidazole. Imidazole is removed by  
15 a final dialyzing step against PBS or 50 mM sodium acetate pH 6 buffer plus 200 mM NaCl. The purified protein is stored at 4° C or frozen at -80° C.

In addition to the above expression vector, the present invention further includes an expression vector, called pHE4a (ATCC Accession Number 209645, deposited on February 25, 1998) which contains phage operator and promoter elements operatively  
20 linked to a polynucleotide encoding an albumin fusion protein of the present invention, called pHE4a. (ATCC Accession Number 209645, deposited on February 25, 1998.) This vector contains: 1) a neomycinphosphotransferase gene as a selection marker, 2) an E. coli origin of replication, 3) a T5 phage promoter sequence, 4) two lac operator sequences, 5) a Shine-Delgarno sequence, and 6) the lactose operon repressor gene (*lacIq*). The origin of  
25 replication (*oriC*) is derived from pUC19 (LTI, Gaithersburg, MD). The promoter and operator sequences are made synthetically.

DNA can be inserted into the pHE4a by restricting the vector with NdeI and XbaI, BamHI, XhoI, or Asp718, running the restricted product on a gel, and isolating the larger fragment (the stuffer fragment should be about 310 base pairs). The DNA insert is  
30 generated according to PCR protocols described herein or otherwise known in the art, using PCR primers having restriction sites for NdeI (5' primer) and XbaI, BamHI, XhoI, or Asp718 (3' primer). The PCR insert is gel purified and restricted with compatible

enzymes. The insert and vector are ligated according to standard protocols.

The engineered vector may be substituted in the above protocol to express protein in a bacterial system.

#### 5           **Example 14: Expression of an Albumin Fusion Protein in Mammalian Cells**

The albumin fusion proteins of the present invention can be expressed in a mammalian cell. A typical mammalian expression vector contains a promoter element, which mediates the initiation of transcription of mRNA, a protein coding sequence, and signals required for the termination of transcription and polyadenylation of the transcript.  
10 Additional elements include enhancers, Kozak sequences and intervening sequences flanked by donor and acceptor sites for RNA splicing. Highly efficient transcription is achieved with the early and late promoters from SV40, the long terminal repeats (LTRs) from Retroviruses, e.g., RSV, HTLVI, HIVI and the early promoter of the cytomegalovirus (CMV). However, cellular elements can also be used (e.g., the human actin promoter).

15           Suitable expression vectors for use in practicing the present invention include, for example, vectors such as, pSVL and pMSG (Pharmacia, Uppsala, Sweden), pRSVcat (ATCC 37152), pSV2dhfr (ATCC 37146), pBC12MI (ATCC 67109), pCMVSPORT 2.0, and pCMVSPORT 3.0. Mammalian host cells that could be used include, but are not limited to, human HeLa, 293, H9 and Jurkat cells, mouse NIH3T3 and C127 cells, Cos 1, Cos 7  
20 and CV1, quail QC1-3 cells, mouse L cells and Chinese hamster ovary (CHO) cells.

Alternatively, the albumin fusion protein can be expressed in stable cell lines containing the polynucleotide encoding the albumin fusion protein integrated into a chromosome. The co-transfection with a selectable marker such as DHFR, gpt, neomycin, or hygromycin allows the identification and isolation of the transfected cells.

25           The transfected polynucleotide encoding the fusion protein can also be amplified to express large amounts of the encoded fusion protein. The DHFR (dihydrofolate reductase) marker is useful in developing cell lines that carry several hundred or even several thousand copies of the gene of interest. (See, e.g., Alt et al., J. Biol. Chem. 253:1357-1370 (1978); Hamlin et al., Biochem. et Biophys. Acta, 1097:107-143 (1990); Page et al.,  
30 Biotechnology 9:64-68 (1991)). Another useful selection marker is the enzyme glutamine synthase (GS) (Murphy et al., Biochem J. 227:277-279 (1991); Bebbington et al., Bio/Technology 10:169-175 (1992). Using these markers, the mammalian cells are grown

in selective medium and the cells with the highest resistance are selected. These cell lines contain the amplified gene(s) integrated into a chromosome. Chinese hamster ovary (CHO) and NSO cells are often used for the production of proteins.

Derivatives of the plasmid pSV2-dhfr (ATCC Accession No. 37146), the  
5 expression vectors pC4 (ATCC Accession No. 209646) and pC6 (ATCC Accession No. 209647) contain the strong promoter (LTR) of the Rous Sarcoma Virus (Cullen et al., Molecular and Cellular Biology, 438-447 (March, 1985)) plus a fragment of the CMV-enhancer (Boshart et al., Cell 41:521-530 (1985)). Multiple cloning sites, e.g., with the restriction enzyme cleavage sites BamHI, XbaI and Asp718, facilitate the cloning of the  
10 gene of interest. The vectors also contain the 3' intron, the polyadenylation and termination signal of the rat preproinsulin gene, and the mouse DHFR gene under control of the SV40 early promoter.

Specifically, the plasmid pC6, for example, is digested with appropriate restriction enzymes and then dephosphorylated using calf intestinal phosphates by procedures known  
15 in the art. The vector is then isolated from a 1% agarose gel.

A polynucleotide encoding an albumin fusion protein of the present invention is generated using techniques known in the art and this polynucleotide is amplified using PCR technology known in the art. If a naturally occurring signal sequence is used to produce the fusion protein of the present invention, the vector does not need a second  
20 signal peptide. Alternatively, if a naturally occurring signal sequence is not used, the vector can be modified to include a heterologous signal sequence. (See, e.g., International Publication No. WO 96/34891.)

The amplified fragment encoding the fusion protein of the invention is isolated from a 1% agarose gel using a commercially available kit ("GeneClean," BIO 101 Inc., La  
25 Jolla, Ca.). The fragment then is digested with appropriate restriction enzymes and again purified on a 1% agarose gel.

The amplified fragment encoding the albumin fusion protein of the invention is then digested with the same restriction enzyme and purified on a 1% agarose gel. The isolated fragment and the dephosphorylated vector are then ligated with T4 DNA ligase.  
30 *E. coli* HB101 or XL-1 Blue cells are then transformed and bacteria are identified that contain the fragment inserted into plasmid pC6 using, for instance, restriction enzyme analysis.

Chinese hamster ovary cells lacking an active DHFR gene is used for transfection. Five  $\mu$ g of the expression plasmid pC6 or pC4 is cotransfected with 0.5  $\mu$ g of the plasmid pSVneo using lipofectin (Felgner et al., *supra*). The plasmid pSV2-neo contains a dominant selectable marker, the *neo* gene from Tn5 encoding an enzyme that confers resistance to a group of antibiotics including G418. The cells are seeded in alpha minus MEM supplemented with 1 mg/ml G418. After 2 days, the cells are trypsinized and seeded in hybridoma cloning plates (Greiner, Germany) in alpha minus MEM supplemented with 10, 25, or 50 ng/ml of methotrexate plus 1 mg/ml G418. After about 10-14 days single clones are trypsinized and then seeded in 6-well petri dishes or 10 ml flasks using different concentrations of methotrexate (50 nM, 100 nM, 200 nM, 400 nM, 800 nM). Clones growing at the highest concentrations of methotrexate are then transferred to new 6-well plates containing even higher concentrations of methotrexate (1  $\mu$ M, 2  $\mu$ M, 5  $\mu$ M, 10 mM, 20 mM). The same procedure is repeated until clones are obtained which grow at a concentration of 100 - 200  $\mu$ M. Expression of the desired fusion protein is analyzed, for instance, by SDS-PAGE and Western blot or by reversed phase HPLC analysis.

#### Example 15: Multifusion Fusions

The albumin fusion proteins (e.g., containing a Therapeutic protein (or fragment or variant thereof) fused to albumin (or a fragment or variant thereof)) may additionally be fused to other proteins to generate "multifusion proteins". These multifusion proteins can be used for a variety of applications. For example, fusion of the albumin fusion proteins of the invention to His-tag, HA-tag, protein A, IgG domains, and maltose binding protein facilitates purification. (See e.g., EP A 394,827; Traunecker et al., Nature 331:84-86 (1988)). Nuclear localization signals fused to the polypeptides of the present invention can target the protein to a specific subcellular localization, while covalent heterodimer or homodimers can increase or decrease the activity of an albumin fusion protein. Furthermore, the fusion of additional protein sequences to the albumin fusion proteins of the invention may further increase the solubility and/or stability of the fusion protein. The fusion proteins described above can be made using or routinely modifying techniques known in the art and/or by modifying the following protocol, which outlines the fusion of a polypeptide to an IgG molecule.

Briefly, the human Fc portion of the IgG molecule can be PCR amplified, using primers that span the 5' and 3' ends of the sequence described below. These primers also should have convenient restriction enzyme sites that will facilitate cloning into an expression vector, preferably a mammalian or yeast expression vector.

5        For example, if pC4 (ATCC Accession No. 209646) is used, the human Fc portion can be ligated into the BamHI cloning site. Note that the 3' BamHI site should be destroyed. Next, the vector containing the human Fc portion is re-restricted with BamHI, linearizing the vector, and a polynucleotide encoding an albumin fusion protein of the present invention (generated and isolated using techniques known in the art), is ligated  
10       into this BamHI site. Note that the polynucleotide encoding the fusion protein of the invention is cloned without a stop codon, otherwise a Fc containing fusion protein will not be produced.

      If the naturally occurring signal sequence is used to produce the albumin fusion protein of the present invention, pC4 does not need a second signal peptide. Alternatively,  
15       if the naturally occurring signal sequence is not used, the vector can be modified to include a heterologous signal sequence. (See, e.g., International Publication No. WO 96/34891.)

Human IgG Fc region:

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GGGATCCGGAGCCCAAATCTTCTGACAAAACTCACACATGCCCACCGT
20  GCCCAGCACCTGAATTCGAGGGTGCACCGTCAGTCTTCCTCTTCCCCCAA
    CCAAGGACACCCTCATGATCTCCCGGACTCCTGAGGTCACATGCGTGGTGGT
    GGACGTAAGCCACGAAGACCCTGAGGTCAAGTTCAACTGGTACGTGGACGGC
    GTGGAGGTGCATAATGCCAAGACAAAGCCGCGGGAGGAGCAGTACAACAGCA
    CGTACCGTGTGGTCAGCGTCCTCACCGTCCTGCACCAGGACTGGCTGAATGGC
25  AAGGAGTACAAGTGCAAGGTCTCCAACAAAGCCCTCCCAACCCCCATCGAGA
    AAACCATCTCCAAAGCCAAAGGGCAGCCCCGAGAACCACAGGTGTACACCCT
    GCCCCCATCCCGGGATGAGCTGACCAAGAACCAGGTCAGCCTGACCTGCCTG
    GTCAAAGGCTTCTATCCAAGCGACATCGCCGTGGAGTGGGAGAGCAATGGGC
    AGCCGGAGAACAACACTACAAGACCACGCCTCCCGTGCTGGACTCCGACGGCTC
30  CTTCTTCCTCTACAGCAAGCTCACCGTGGACAAGAGCAGGTGGCAGCAGGGG
    AACGTCTTCTCATGCTCCGTGATGCATGAGGCTCTGCACAACCACTACACGCA
    GAAGAGCCTCTCCCTGTCTCCGGGTAAATGAGTGCGACGGCCGCGACTCTAGA
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GGAT (SEQ ID NO: 36)

**Example 16: Production of an Antibody from an Albumin Fusion Protein****a) Hybridoma Technology**

5       Antibodies that bind the albumin fusion proteins of the present invention and portions of the albumin fusion proteins of the present invention (e.g., the Therapeutic protein portion or albumin portion of the fusion protein) can be prepared by a variety of methods. (See, Current Protocols, Chapter 2.) As one example of such methods, a preparation of an albumin fusion protein of the invention or a portion of an albumin fusion  
10       protein of the invention is prepared and purified to render it substantially free of natural contaminants. Such a preparation is then introduced into an animal in order to produce polyclonal antisera of greater specific activity.

Monoclonal antibodies specific for an albumin fusion protein of the invention, or a portion of an albumin fusion protein of the invention, are prepared using hybridoma  
15       technology (Kohler et al., Nature 256:495 (1975); Kohler et al., Eur. J. Immunol. 6:511 (1976); Kohler et al., Eur. J. Immunol. 6:292 (1976); Hammerling et al., in: Monoclonal Antibodies and T-Cell Hybridomas, Elsevier, N.Y., pp. 563-681 (1981)). In general, an animal (preferably a mouse) is immunized with an albumin fusion protein of the invention, or a portion of an albumin fusion protein of the invention. The splenocytes of such mice  
20       are extracted and fused with a suitable myeloma cell line. Any suitable myeloma cell line may be employed in accordance with the present invention; however, it is preferable to employ the parent myeloma cell line (SP2O), available from the ATCC. After fusion, the resulting hybridoma cells are selectively maintained in HAT medium, and then cloned by limiting dilution as described by Wands et al. (Gastroenterology 80:225-232 (1981)). The  
25       hybridoma cells obtained through such a selection are then assayed to identify clones which secrete antibodies capable of binding an albumin fusion protein of the invention, or a portion of an albumin fusion protein of the invention.

Alternatively, additional antibodies capable of binding to an albumin fusion protein of the invention, or a portion of an albumin fusion protein of the invention can be  
30       produced in a two-step procedure using anti-idiotypic antibodies. Such a method makes use of the fact that antibodies are themselves antigens, and therefore, it is possible to obtain an antibody which binds to a second antibody. In accordance with this method,

protein specific antibodies are used to immunize an animal, preferably a mouse. The splenocytes of such an animal are then used to produce hybridoma cells, and the hybridoma cells are screened to identify clones which produce an antibody whose ability to bind to the an albumin fusion protein of the invention (or portion of an albumin fusion protein of the invention) -specific antibody can be blocked by the fusion protein of the invention, or a portion of an albumin fusion protein of the invention. Such antibodies comprise anti-idiotypic antibodies to the fusion protein of the invention (or portion of an albumin fusion protein of the invention) -specific antibody and are used to immunize an animal to induce formation of further fusion protein of the invention (or portion of an albumin fusion protein of the invention) -specific antibodies.

For *in vivo* use of antibodies in humans, an antibody is "humanized". Such antibodies can be produced using genetic constructs derived from hybridoma cells producing the monoclonal antibodies described above. Methods for producing chimeric and humanized antibodies are known in the art and are discussed herein. (See, for review, Morrison, Science 229:1202 (1985); Oi et al., BioTechniques 4:214 (1986); Cabilly et al., U.S. Patent No. 4,816,567; Taniguchi et al., EP 171496; Morrison et al., EP 173494; Neuberger et al., WO 8601533; Robinson et al., International Publication No. WO 8702671; Boulianne et al., Nature 312:643 (1984); Neuberger et al., Nature 314:268 (1985)).

b) Isolation Of Antibody Fragments Directed Against an albumin fusion protein of the invention, or a portion of an albumin fusion protein of the invention From A Library Of scFvs

Naturally occurring V-genes isolated from human PBLs are constructed into a library of antibody fragments which contain reactivities against an albumin fusion protein of the invention, or a portion of an albumin fusion protein of the invention, to which the donor may or may not have been exposed (see e.g., U.S. Patent 5,885,793 incorporated herein by reference in its entirety).

*Rescue of the Library.* A library of scFvs is constructed from the RNA of human PBLs as described in International Publication No. WO 92/01047. To rescue phage displaying antibody fragments, approximately  $10^9$  *E. coli* harboring the phagemid are used to inoculate 50 ml of 2xTY containing 1% glucose and 100 µg/ml of ampicillin (2xTY-



AMP-GLU) and grown to an O.D. of 0.8 with shaking. Five ml of this culture is used to inoculate 50 ml of 2xTY-AMP-GLU,  $2 \times 10^8$  TU of delta gene 3 helper (M13 delta gene III, see International Publication No. WO 92/01047) are added and the culture incubated at 37°C for 45 minutes without shaking and then at 37°C for 45 minutes with shaking. The culture is centrifuged at 4000 r.p.m. for 10 min. and the pellet resuspended in 2 liters of 2xTY containing 100 µg/ml ampicillin and 50 µg/ml kanamycin and grown overnight. Phage are prepared as described in International Publication No. WO 92/01047.

M13 delta gene III is prepared as follows: M13 delta gene III helper phage does not encode gene III protein, hence the phage(mid) displaying antibody fragments have a greater avidity of binding to antigen. Infectious M13 delta gene III particles are made by growing the helper phage in cells harboring a pUC19 derivative supplying the wild type gene III protein during phage morphogenesis. The culture is incubated for 1 hour at 37°C without shaking and then for a further hour at 37°C with shaking. Cells are spun down (IEC-Centra 8,400 r.p.m. for 10 min), resuspended in 300 ml 2xTY broth containing 100 µg ampicillin/ml and 25 µg kanamycin/ml (2xTY-AMP-KAN) and grown overnight, shaking at 37°C. Phage particles are purified and concentrated from the culture medium by two PEG-precipitations (Sambrook et al., 1990), resuspended in 2 ml PBS and passed through a 0.45 µm filter (Minisart NML; Sartorius) to give a final concentration of approximately  $10^{13}$  transducing units/ml (ampicillin-resistant clones).

*Panning of the Library.* Immuntubes (Nunc) are coated overnight in PBS with 4 ml of either 100 µg/ml or 10 µg/ml of an albumin fusion protein of the invention, or a portion of an albumin fusion protein of the invention. Tubes are blocked with 2% Marvel-PBS for 2 hours at 37°C and then washed 3 times in PBS. Approximately  $10^{13}$  TU of phage is applied to the tube and incubated for 30 minutes at room temperature tumbling on an over and under turntable and then left to stand for another 1.5 hours. Tubes are washed 10 times with PBS 0.1% Tween-20 and 10 times with PBS. Phage are eluted by adding 1 ml of 100 mM triethylamine and rotating 15 minutes on an under and over turntable after which the solution is immediately neutralized with 0.5 ml of 1.0M Tris-HCl, pH 7.4. Phage are then used to infect 10 ml of mid-log E. coli TG1 by incubating eluted phage with bacteria for 30 minutes at 37°C. The E. coli are then plated on TYE plates containing 1% glucose and 100 µg/ml ampicillin. The resulting bacterial library is then rescued with delta gene 3 helper phage as described above to prepare phage for a subsequent round of

selection. This process is then repeated for a total of 4 rounds of affinity purification with tube-washing increased to 20 times with PBS, 0.1% Tween-20 and 20 times with PBS for rounds 3 and 4.

*Characterization of Binders.* Eluted phage from the 3rd and 4th rounds of selection are used to infect E. coli HB 2151 and soluble scFv is produced (Marks, et al., 1991) from single colonies for assay. ELISAs are performed with microtitre plates coated with either 10 pg/ml of an albumin fusion protein of the invention, or a portion of an albumin fusion protein of the invention, in 50 mM bicarbonate pH 9.6. Clones positive in ELISA are further characterized by PCR fingerprinting (see, e.g., International Publication No. WO 92/01047) and then by sequencing. These ELISA positive clones may also be further characterized by techniques known in the art, such as, for example, epitope mapping, binding affinity, receptor signal transduction, ability to block or competitively inhibit antibody/antigen binding, and competitive agonistic or antagonistic activity.

#### **Example 17: Method of Treatment Using Gene Therapy-Ex Vivo**

One method of gene therapy transplants fibroblasts, which are capable of expressing an albumin fusion protein of the present invention, onto a patient. Generally, fibroblasts are obtained from a subject by skin biopsy. The resulting tissue is placed in tissue-culture medium and separated into small pieces. Small chunks of the tissue are placed on a wet surface of a tissue culture flask, approximately ten pieces are placed in each flask. The flask is turned upside down, closed tight and left at room temperature over night. After 24 hours at room temperature, the flask is inverted and the chunks of tissue remain fixed to the bottom of the flask and fresh media (e.g., Ham's F12 media, with 10% FBS, penicillin and streptomycin) is added. The flasks are then incubated at 37 degree C for approximately one week.

At this time, fresh media is added and subsequently changed every several days. After an additional two weeks in culture, a monolayer of fibroblasts emerge. The monolayer is trypsinized and scaled into larger flasks.

pMV-7 (Kirschmeier, P.T. et al., DNA, 7:219-25 (1988)), flanked by the long terminal repeats of the Moloney murine sarcoma virus, is digested with EcoRI and HindIII and subsequently treated with calf intestinal phosphatase. The linear vector is fractionated

on agarose gel and purified, using glass beads.

Polynucleotides encoding an albumin fusion protein of the invention can be generated using techniques known in the art amplified using PCR primers which correspond to the 5' and 3' end sequences and optionally having appropriate restriction sites and initiation/stop codons, if necessary. Preferably, the 5' primer contains an EcoRI  
5 site and the 3' primer includes a HindIII site. Equal quantities of the Moloney murine sarcoma virus linear backbone and the amplified EcoRI and HindIII fragment are added together, in the presence of T4 DNA ligase. The resulting mixture is maintained under conditions appropriate for ligation of the two fragments. The ligation mixture is then used  
10 to transform bacteria HB101, which are then plated onto agar containing kanamycin for the purpose of confirming that the vector has the gene of interest properly inserted.

The amphotropic pA317 or GP+am12 packaging cells are grown in tissue culture to confluent density in Dulbecco's Modified Eagles Medium (DMEM) with 10% calf serum (CS), penicillin and streptomycin. The MSV vector containing the gene is then  
15 added to the media and the packaging cells transduced with the vector. The packaging cells now produce infectious viral particles containing the gene (the packaging cells are now referred to as producer cells).

Fresh media is added to the transduced producer cells, and subsequently, the media is harvested from a 10 cm plate of confluent producer cells. The spent media, containing  
20 the infectious viral particles, is filtered through a millipore filter to remove detached producer cells and this media is then used to infect fibroblast cells. Media is removed from a sub-confluent plate of fibroblasts and quickly replaced with the media from the producer cells. This media is removed and replaced with fresh media. If the titer of virus is high, then virtually all fibroblasts will be infected and no selection is required. If the  
25 titer is very low, then it is necessary to use a retroviral vector that has a selectable marker, such as neo or his. Once the fibroblasts have been efficiently infected, the fibroblasts are analyzed to determine whether the albumin fusion protein is produced.

The engineered fibroblasts are then transplanted onto the host, either alone or after having been grown to confluence on cytodex 3 microcarrier beads.

30

#### **Example 18: Method of Treatment Using Gene Therapy - In Vivo**

Another aspect of the present invention is using *in vivo* gene therapy methods to

treat disorders, diseases and conditions. The gene therapy method relates to the introduction of naked nucleic acid (DNA, RNA, and antisense DNA or RNA) sequences encoding an albumin fusion protein of the invention into an animal. Polynucleotides encoding albumin fusion proteins of the present invention may be operatively linked to  
5 (i.e., associated with) a promoter or any other genetic elements necessary for the expression of the polypeptide by the target tissue. Such gene therapy and delivery techniques and methods are known in the art, see, for example, WO90/11092, WO98/11779; U.S. Patent NO. 5693622, 5705151, 5580859; Tabata et al., Cardiovasc. Res. 35(3):470-479 (1997); Chao et al., Pharmacol. Res. 35(6):517-522 (1997); Wolff,  
10 Neuromuscul. Disord. 7(5):314-318 (1997); Schwartz et al., Gene Ther. 3(5):405-411 (1996); Tsurumi et al., Circulation 94(12):3281-3290 (1996) (incorporated herein by reference).

The polynucleotide constructs may be delivered by any method that delivers injectable materials to the cells of an animal, such as, injection into the interstitial space of  
15 tissues (heart, muscle, skin, lung, liver, intestine and the like). The polynucleotide constructs can be delivered in a pharmaceutically acceptable liquid or aqueous carrier.

The term "naked" polynucleotide, DNA or RNA, refers to sequences that are free from any delivery vehicle that acts to assist, promote, or facilitate entry into the cell, including viral sequences, viral particles, liposome formulations, lipofectin or precipitating  
20 agents and the like. However, polynucleotides encoding albumin fusion proteins of the present invention may also be delivered in liposome formulations (such as those taught in Felgner P.L. et al. (1995) Ann. NY Acad. Sci. 772:126-139 and Abdallah B. et al. (1995) Biol. Cell 85(1):1-7) which can be prepared by methods well known to those skilled in the art.

The polynucleotide vector constructs used in the gene therapy method are preferably constructs that will not integrate into the host genome nor will they contain sequences that allow for replication. Any strong promoter known to those skilled in the art can be used for driving the expression of DNA. Unlike other gene therapy techniques, one major advantage of introducing naked nucleic acid sequences into target cells is the  
25 transitory nature of the polynucleotide synthesis in the cells. Studies have shown that non-replicating DNA sequences can be introduced into cells to provide production of the  
30 desired polypeptide for periods of up to six months.

The polynucleotide construct can be delivered to the interstitial space of tissues within an animal, including muscle, skin, brain, lung, liver, spleen, bone marrow, thymus, heart, lymph, blood, bone, cartilage, pancreas, kidney, gall bladder, stomach, intestine, testis, ovary, uterus, rectum, nervous system, eye, gland, and connective tissue. Interstitial space of the tissues comprises the intercellular fluid, mucopolysaccharide matrix among the reticular fibers of organ tissues, elastic fibers in the walls of vessels or chambers, collagen fibers of fibrous tissues, or that same matrix within connective tissue ensheathing muscle cells or in the lacunae of bone. It is similarly the space occupied by the plasma of the circulation and the lymph fluid of the lymphatic channels. Delivery to the interstitial space of muscle tissue is preferred for the reasons discussed below. They may be conveniently delivered by injection into the tissues comprising these cells. They are preferably delivered to and expressed in persistent, non-dividing cells which are differentiated, although delivery and expression may be achieved in non-differentiated or less completely differentiated cells, such as, for example, stem cells of blood or skin fibroblasts. *In vivo* muscle cells are particularly competent in their ability to take up and express polynucleotides.

For the naked polynucleotide injection, an effective dosage amount of DNA or RNA will be in the range of from about 0.05 g/kg body weight to about 50 mg/kg body weight. Preferably the dosage will be from about 0.005 mg/kg to about 20 mg/kg and more preferably from about 0.05 mg/kg to about 5 mg/kg. Of course, as the artisan of ordinary skill will appreciate, this dosage will vary according to the tissue site of injection.

The appropriate and effective dosage of nucleic acid sequence can readily be determined by those of ordinary skill in the art and may depend on the condition being treated and the route of administration. The preferred route of administration is by the parenteral route of injection into the interstitial space of tissues. However, other parenteral routes may also be used, such as, inhalation of an aerosol formulation particularly for delivery to lungs or bronchial tissues, throat or mucous membranes of the nose. In addition, naked polynucleotide constructs can be delivered to arteries during angioplasty by the catheter used in the procedure.

The dose response effects of injected polynucleotide in muscle *in vivo* is determined as follows. Suitable template DNA for production of mRNA coding for polypeptide of the present invention is prepared in accordance with a standard

recombinant DNA methodology. The template DNA, which may be either circular or linear, is either used as naked DNA or complexed with liposomes. The quadriceps muscles of mice are then injected with various amounts of the template DNA.

Five to six week old female and male Balb/C mice are anesthetized by intraperitoneal injection with 0.3 ml of 2.5% Avertin. A 1.5 cm incision is made on the anterior thigh, and the quadriceps muscle is directly visualized. The template DNA is injected in 0.1 ml of carrier in a 1 cc syringe through a 27 gauge needle over one minute, approximately 0.5 cm from the distal insertion site of the muscle into the knee and about 0.2 cm deep. A suture is placed over the injection site for future localization, and the skin is closed with stainless steel clips.

After an appropriate incubation time (e.g., 7 days) muscle extracts are prepared by excising the entire quadriceps. Every fifth 15 um cross-section of the individual quadriceps muscles is histochemically stained for protein expression. A time course for fusion protein expression may be done in a similar fashion except that quadriceps from different mice are harvested at different times. Persistence of DNA in muscle following injection may be determined by Southern blot analysis after preparing total cellular DNA and HIRT supernatants from injected and control mice. The results of the above experimentation in mice can be used to extrapolate proper dosages and other treatment parameters in humans and other animals using naked DNA.

#### **Example 19: Transgenic Animals**

The albumin fusion proteins of the invention can also be expressed in transgenic animals. Animals of any species, including, but not limited to, mice, rats, rabbits, hamsters, guinea pigs, pigs, micro-pigs, goats, sheep, cows and non-human primates, e.g., baboons, monkeys, and chimpanzees may be used to generate transgenic animals. In a specific embodiment, techniques described herein or otherwise known in the art, are used to express fusion proteins of the invention in humans, as part of a gene therapy protocol.

Any technique known in the art may be used to introduce the polynucleotides encoding the albumin fusion proteins of the invention into animals to produce the founder lines of transgenic animals. Such techniques include, but are not limited to, pronuclear microinjection (Paterson et al., Appl. Microbiol. Biotechnol. 40:691-698 (1994); Carver et al., Biotechnology (NY) 11:1263-1270 (1993); Wright et al., Biotechnology (NY) 9:830-

834 (1991); and Hoppe et al., U.S. Pat. No. 4,873,191 (1989)); retrovirus mediated gene transfer into germ lines (Van der Putten et al., Proc. Natl. Acad. Sci., USA 82:6148-6152 (1985)), blastocysts or embryos; gene targeting in embryonic stem cells (Thompson et al., Cell 56:313-321 (1989)); electroporation of cells or embryos (Lo, 1983, Mol Cell. Biol. 3:1803-1814 (1983)); introduction of the polynucleotides of the invention using a gene gun (see, e.g., Ulmer et al., Science 259:1745 (1993); introducing nucleic acid constructs into embryonic pluripotent stem cells and transferring the stem cells back into the blastocyst; and sperm-mediated gene transfer (Lavitrano et al., Cell 57:717-723 (1989); etc. For a review of such techniques, see Gordon, "Transgenic Animals," Intl. Rev. Cytol. 115:171-229 (1989), which is incorporated by reference herein in its entirety.

Any technique known in the art may be used to produce transgenic clones containing polynucleotides encoding albumin fusion proteins of the invention, for example, nuclear transfer into enucleated oocytes of nuclei from cultured embryonic, fetal, or adult cells induced to quiescence (Campell et al., Nature 380:64-66 (1996); Wilmut et al., Nature 385:810-813 (1997)).

The present invention provides for transgenic animals that carry the polynucleotides encoding the albumin fusion proteins of the invention in all their cells, as well as animals which carry these polynucleotides in some, but not all their cells, *i.e.*, mosaic animals or chimeric. The transgene may be integrated as a single transgene or as multiple copies such as in concatamers, *e.g.*, head-to-head tandems or head-to-tail tandems. The transgene may also be selectively introduced into and activated in a particular cell type by following, for example, the teaching of Lasko et al. (Lasko et al., Proc. Natl. Acad. Sci. USA 89:6232-6236 (1992)). The regulatory sequences required for such a cell-type specific activation will depend upon the particular cell type of interest, and will be apparent to those of skill in the art. When it is desired that the polynucleotide encoding the fusion protein of the invention be integrated into the chromosomal site of the endogenous gene corresponding to the Therapeutic protein portion or albumin portion of the fusion protein of the invention, gene targeting is preferred. Briefly, when such a technique is to be utilized, vectors containing some nucleotide sequences homologous to the endogenous gene are designed for the purpose of integrating, via homologous recombination with chromosomal sequences, into and disrupting the function of the nucleotide sequence of the endogenous gene. The transgene may also be selectively

introduced into a particular cell type, thus inactivating the endogenous gene in only that cell type, by following, for example, the teaching of Gu et al. (Gu et al., Science 265:103-106 (1994)). The regulatory sequences required for such a cell-type specific inactivation will depend upon the particular cell type of interest, and will be apparent to those of skill in the art.

Once transgenic animals have been generated, the expression of the recombinant gene may be assayed utilizing standard techniques. Initial screening may be accomplished by Southern blot analysis or PCR techniques to analyze animal tissues to verify that integration of the polynucleotide encoding the fusion protein of the invention has taken place. The level of mRNA expression of the polynucleotide encoding the fusion protein of the invention in the tissues of the transgenic animals may also be assessed using techniques which include, but are not limited to, Northern blot analysis of tissue samples obtained from the animal, *in situ* hybridization analysis, and reverse transcriptase-PCR (rt-PCR). Samples of fusion protein-expressing tissue may also be evaluated immunocytochemically or immunohistochemically using antibodies specific for the fusion protein.

Once the founder animals are produced, they may be bred, inbred, outbred, or crossbred to produce colonies of the particular animal. Examples of such breeding strategies include, but are not limited to: outbreeding of founder animals with more than one integration site in order to establish separate lines; inbreeding of separate lines in order to produce compound transgenics that express the transgene at higher levels because of the effects of additive expression of each transgene; crossing of heterozygous transgenic animals to produce animals homozygous for a given integration site in order to both augment expression and eliminate the need for screening of animals by DNA analysis; crossing of separate homozygous lines to produce compound heterozygous or homozygous lines; and breeding to place the transgene (i.e., polynucleotide encoding an albumin fusion protein of the invention) on a distinct background that is appropriate for an experimental model of interest.

Transgenic animals of the invention have uses which include, but are not limited to, animal model systems useful in elaborating the biological function of fusion proteins of the invention and the Therapeutic protein and/or albumin component of the fusion protein of the invention, studying conditions and/or disorders associated with aberrant expression,



and in screening for compounds effective in ameliorating such conditions and/or disorders.

**Example 20: Assays Detecting Stimulation or Inhibition of B cell Proliferation and Differentiation**

5           Generation of functional humoral immune responses requires both soluble and cognate signaling between B-lineage cells and their microenvironment. Signals may impart a positive stimulus that allows a B-lineage cell to continue its programmed development, or a negative stimulus that instructs the cell to arrest its current developmental pathway. To date, numerous stimulatory and inhibitory signals have been  
10 found to influence B cell responsiveness including IL-2, IL-4, IL-5, IL-6, IL-7, IL10, IL-13, IL-14 and IL-15. Interestingly, these signals are by themselves weak effectors but can, in combination with various co-stimulatory proteins, induce activation, proliferation, differentiation, homing, tolerance and death among B cell populations.

One of the best studied classes of B-cell co-stimulatory proteins is the TNF-  
15 superfamily. Within this family CD40, CD27, and CD30 along with their respective ligands CD154, CD70, and CD153 have been found to regulate a variety of immune responses. Assays which allow for the detection and/or observation of the proliferation and differentiation of these B-cell populations and their precursors are valuable tools in determining the effects various proteins may have on these B-cell populations in terms of  
20 proliferation and differentiation. Listed below are two assays designed to allow for the detection of the differentiation, proliferation, or inhibition of B-cell populations and their precursors.

In Vitro Assay- Albumin fusion proteins of the invention (including fusion proteins containing fragments or variants of Therapeutic proteins and/or albumin or fragments or  
25 variants of albumin) can be assessed for its ability to induce activation, proliferation, differentiation or inhibition and/or death in B-cell populations and their precursors. The activity of an albumin fusion protein of the invention on purified human tonsillar B cells, measured qualitatively over the dose range from 0.1 to 10,000 ng/mL, is assessed in a standard B-lymphocyte co-stimulation assay in which purified tonsillar B cells are cultured  
30 in the presence of either formalin-fixed *Staphylococcus aureus* Cowan I (SAC) or immobilized anti-human IgM antibody as the priming agent. Second signals such as IL-2 and IL-15 synergize with SAC and IgM crosslinking to elicit B cell proliferation as

measured by tritiated-thymidine incorporation. Novel synergizing agents can be readily identified using this assay. The assay involves isolating human tonsillar B cells by magnetic bead (MACS) depletion of CD3-positive cells. The resulting cell population is greater than 95% B cells as assessed by expression of CD45R(B220).

5 Various dilutions of each sample are placed into individual wells of a 96-well plate to which are added  $10^5$  B-cells suspended in culture medium (RPMI 1640 containing 10% FBS,  $5 \times 10^{-5}$ M 2ME, 100U/ml penicillin, 10ug/ml streptomycin, and  $10^{-5}$  dilution of SAC) in a total volume of 150ul. Proliferation or inhibition is quantitated by a 20h pulse (1uCi/well) with  $^3$ H-thymidine (6.7 Ci/mM) beginning 72h post factor addition. The  
10 positive and negative controls are IL2 and medium respectively.

*In vivo* Assay- BALB/c mice are injected (i.p.) twice per day with buffer only, or 2 mg/Kg of an albumin fusion protein of the invention (including fusion proteins containing fragments or variants of Therapeutic proteins and/or albumin or fragments or variants of albumin). Mice receive this treatment for 4 consecutive days, at which time they are  
15 sacrificed and various tissues and serum collected for analyses. Comparison of H&E sections from normal spleens and spleens treated with the albumin fusion protein of the invention identify the results of the activity of the fusion protein on spleen cells, such as the diffusion of peri-arterial lymphatic sheaths, and/or significant increases in the nucleated cellularity of the red pulp regions, which may indicate the activation of the  
20 differentiation and proliferation of B-cell populations. Immunohistochemical studies using a B cell marker, anti-CD45R(B220), are used to determine whether any physiological changes to splenic cells, such as splenic disorganization, are due to increased B-cell representation within loosely defined B-cell zones that infiltrate established T-cell regions.

Flow cytometric analyses of the spleens from mice treated with the albumin fusion  
25 protein is used to indicate whether the albumin fusion protein specifically increases the proportion of ThB+, CD45R(B220)dull B cells over that which is observed in control mice.

Likewise, a predicted consequence of increased mature B-cell representation *in vivo* is a relative increase in serum Ig titers. Accordingly, serum IgM and IgA levels are  
30 compared between buffer and fusion protein treated mice.

The studies described in this example tested activity of fusion proteins of the invention. However, one skilled in the art could easily modify the exemplified studies to

test the activity of fusion proteins and polynucleotides of the invention (e.g., gene therapy).

#### **Example 21: T Cell Proliferation Assay**

5 A CD3-induced proliferation assay is performed on PBMCs and is measured by the uptake of  $^3\text{H}$ -thymidine. The assay is performed as follows. Ninety-six well plates are coated with 100  $\mu\text{l}$ /well of mAb to CD3 (HIT3a, Pharmingen) or isotype-matched control mAb (B33.1) overnight at 4 degrees C (1  $\mu\text{g}/\text{ml}$  in .05M bicarbonate buffer, pH 9.5), then washed three times with PBS. PBMC are isolated by F/H gradient centrifugation from  
10 human peripheral blood and added to quadruplicate wells ( $5 \times 10^4$ /well) of mAb coated plates in RPMI containing 10% FCS and P/S in the presence of varying concentrations of an albumin fusion protein of the invention (including fusion proteins containing fragments or variants of Therapeutic proteins and/or albumin or fragments or variants of albumin) (total volume 200  $\mu\text{l}$ ). Relevant protein buffer and medium alone are controls. After 48  
15 hr. culture at 37 degrees C, plates are spun for 2 min. at 1000 rpm and 100  $\mu\text{l}$  of supernatant is removed and stored -20 degrees C for measurement of IL-2 (or other cytokines) if effect on proliferation is observed. Wells are supplemented with 100  $\mu\text{l}$  of medium containing 0.5  $\mu\text{Ci}$  of  $^3\text{H}$ -thymidine and cultured at 37 degrees C for 18-24 hr. Wells are harvested and incorporation of  $^3\text{H}$ -thymidine used as a measure of proliferation.  
20 Anti-CD3 alone is the positive control for proliferation. IL-2 (100 U/ml) is also used as a control which enhances proliferation. Control antibody which does not induce proliferation of T cells is used as the negative control for the effects of fusion proteins of the invention.

The studies described in this example tested activity of fusion proteins of the  
25 invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of fusion proteins or polynucleotides of the invention (e.g., gene therapy).

#### **Example 22: Effect of Fusion Proteins of the Invention on the Expression of MHC Class II, Costimulatory and Adhesion Molecules and Cell Differentiation of Monocytes and Monocyte-Derived Human Dendritic Cells**

30

Dendritic cells are generated by the expansion of proliferating precursors found in the peripheral blood: adherent PBMC or elutriated monocytic fractions are cultured for 7-

10 days with GM-CSF (50 ng/ml) and IL-4 (20 ng/ml). These dendritic cells have the characteristic phenotype of immature cells (expression of CD1, CD80, CD86, CD40 and MHC class II antigens). Treatment with activating factors, such as TNF- $\alpha$ , causes a rapid change in surface phenotype (increased expression of MHC class I and II, costimulatory and adhesion molecules, downregulation of FC $\gamma$ RII, upregulation of CD83). These changes correlate with increased antigen-presenting capacity and with functional maturation of the dendritic cells.

FACS analysis of surface antigens is performed as follows. Cells are treated 1-3 days with increasing concentrations of an albumin fusion protein of the invention or LPS (positive control), washed with PBS containing 1% BSA and 0.02 mM sodium azide, and then incubated with 1:20 dilution of appropriate FITC- or PE-labeled monoclonal antibodies for 30 minutes at 4 degrees C. After an additional wash, the labeled cells are analyzed by flow cytometry on a FACScan (Becton Dickinson).

Effect on the production of cytokines. Cytokines generated by dendritic cells, in particular IL-12, are important in the initiation of T-cell dependent immune responses. IL-12 strongly influences the development of Th1 helper T-cell immune response, and induces cytotoxic T and NK cell function. An ELISA is used to measure the IL-12 release as follows. Dendritic cells ( $10^6$ /ml) are treated with increasing concentrations of an albumin fusion protein of the invention for 24 hours. LPS (100 ng/ml) is added to the cell culture as positive control. Supernatants from the cell cultures are then collected and analyzed for IL-12 content using commercial ELISA kit (e.g., R & D Systems (Minneapolis, MN)). The standard protocols provided with the kits are used.

Effect on the expression of MHC Class II, costimulatory and adhesion molecules. Three major families of cell surface antigens can be identified on monocytes: adhesion molecules, molecules involved in antigen presentation, and Fc receptor. Modulation of the expression of MHC class II antigens and other costimulatory molecules, such as B7 and ICAM-1, may result in changes in the antigen presenting capacity of monocytes and ability to induce T cell activation. Increased expression of Fc receptors may correlate with improved monocyte cytotoxic activity, cytokine release and phagocytosis.

FACS analysis is used to examine the surface antigens as follows. Monocytes are

treated 1-5 days with increasing concentrations of an albumin fusion protein of the invention or LPS (positive control), washed with PBS containing 1% BSA and 0.02 mM sodium azide, and then incubated with 1:20 dilution of appropriate FITC- or PE-labeled monoclonal antibodies for 30 minutes at 4 degrees C. After an additional wash, the  
5 labeled cells are analyzed by flow cytometry on a FACScan (Becton Dickinson).

Monocyte activation and/or increased survival. Assays for molecules that activate (or alternatively, inactivate) monocytes and/or increase monocyte survival (or alternatively, decrease monocyte survival) are known in the art and may routinely be  
10 applied to determine whether a molecule of the invention functions as an inhibitor or activator of monocytes. Albumin fusion proteins of the invention can be screened using the three assays described below. For each of these assays, Peripheral blood mononuclear cells (PBMC) are purified from single donor leukopacks (American Red Cross, Baltimore, MD) by centrifugation through a Histopaque gradient (Sigma). Monocytes are isolated  
15 from PBMC by counterflow centrifugal elutriation.

Monocyte Survival Assay. Human peripheral blood monocytes progressively lose viability when cultured in absence of serum or other stimuli. Their death results from internally regulated processes (apoptosis). Addition to the culture of activating factors,  
20 such as TNF-alpha dramatically improves cell survival and prevents DNA fragmentation. Propidium iodide (PI) staining is used to measure apoptosis as follows. Monocytes are cultured for 48 hours in polypropylene tubes in serum-free medium (positive control), in the presence of 100 ng/ml TNF-alpha (negative control), and in the presence of varying concentrations of the fusion protein to be tested. Cells are suspended at a concentration of  
25  $2 \times 10^6$ /ml in PBS containing PI at a final concentration of 5  $\mu$ g/ml, and then incubated at room temperature for 5 minutes before FACScan analysis. PI uptake has been demonstrated to correlate with DNA fragmentation in this experimental paradigm.

Effect on cytokine release. An important function of monocytes/macrophages is  
30 their regulatory activity on other cellular populations of the immune system through the release of cytokines after stimulation. An ELISA to measure cytokine release is performed as follows. Human monocytes are incubated at a density of  $5 \times 10^5$  cells/ml with increasing

concentrations of an albumin fusion protein of the invention and under the same conditions, but in the absence of the fusion protein. For IL-12 production, the cells are primed overnight with IFN (100 U/ml) in the presence of the fusion protein. LPS (10 ng/ml) is then added. Conditioned media are collected after 24h and kept frozen until use.

- 5 Measurement of TNF-alpha, IL-10, MCP-1 and IL-8 is then performed using a commercially available ELISA kit (e.g., R & D Systems (Minneapolis, MN)) and applying the standard protocols provided with the kit.

- Oxidative burst. Purified monocytes are plated in 96-w plate at  $2 \times 10^5$  cell/well.
- 10 Increasing concentrations of an albumin fusion protein of the invention are added to the wells in a total volume of 0.2 ml culture medium (RPMI 1640 + 10% FCS, glutamine and antibiotics). After 3 days incubation, the plates are centrifuged and the medium is removed from the wells. To the macrophage monolayers, 0.2 ml per well of phenol red solution (140 mM NaCl, 10 mM potassium phosphate buffer pH 7.0, 5.5 mM dextrose, 0.56 mM
- 15 phenol red and 19 U/ml of HRPO) is added, together with the stimulant (200 nM PMA). The plates are incubated at 37°C for 2 hours and the reaction is stopped by adding 20  $\mu$ l 1N NaOH per well. The absorbance is read at 610 nm. To calculate the amount of  $H_2O_2$  produced by the macrophages, a standard curve of a  $H_2O_2$  solution of known molarity is performed for each experiment.

- 20 The studies described in this example tested activity of fusion proteins of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of fusion proteins or polynucleotides of the invention (e.g., gene therapy).

### **Example 23: Biological Effects of Fusion Proteins of the Invention**

- 25 Astrocyte and Neuronal Assays

Albumin fusion proteins of the invention can be tested for activity in promoting the survival, neurite outgrowth, or phenotypic differentiation of cortical neuronal cells and for inducing the proliferation of glial fibrillary acidic protein immunopositive cells, astrocytes.

- The selection of cortical cells for the bioassay is based on the prevalent expression of FGF-1 and FGF-2 in cortical structures and on the previously reported enhancement of
- 30 cortical neuronal survival resulting from FGF-2 treatment. A thymidine incorporation

assay, for example, can be used to elucidate an albumin fusion protein of the invention's activity on these cells.

Moreover, previous reports describing the biological effects of FGF-2 (basic FGF) on cortical or hippocampal neurons *in vitro* have demonstrated increases in both neuron survival and neurite outgrowth (Walicke et al., "Fibroblast growth factor promotes survival of dissociated hippocampal neurons and enhances neurite extension." *Proc. Natl. Acad. Sci. USA* 83:3012-3016. (1986), assay herein incorporated by reference in its entirety). However, reports from experiments done on PC-12 cells suggest that these two responses are not necessarily synonymous and may depend on not only which FGF is being tested but also on which receptor(s) are expressed on the target cells. Using the primary cortical neuronal culture paradigm, the ability of an albumin fusion protein of the invention to induce neurite outgrowth can be compared to the response achieved with FGF-2 using, for example, a thymidine incorporation assay.

#### Fibroblast and endothelial cell assays

Human lung fibroblasts are obtained from Clonetics (San Diego, CA) and maintained in growth media from Clonetics. Dermal microvascular endothelial cells are obtained from Cell Applications (San Diego, CA). For proliferation assays, the human lung fibroblasts and dermal microvascular endothelial cells can be cultured at 5,000 cells/well in a 96-well plate for one day in growth medium. The cells are then incubated for one day in 0.1% BSA basal medium. After replacing the medium with fresh 0.1% BSA medium, the cells are incubated with the test fusion protein of the invention proteins for 3 days. Alamar Blue (Alamar Biosciences, Sacramento, CA) is added to each well to a final concentration of 10%. The cells are incubated for 4 hr. Cell viability is measured by reading in a CytoFluor fluorescence reader. For the PGE<sub>2</sub> assays, the human lung fibroblasts are cultured at 5,000 cells/well in a 96-well plate for one day. After a medium change to 0.1% BSA basal medium, the cells are incubated with FGF-2 or fusion protein of the invention with or without IL-1 $\alpha$  for 24 hours. The supernatants are collected and assayed for PGE<sub>2</sub> by EIA kit (Cayman, Ann Arbor, MI). For the IL-6 assays, the human lung fibroblasts are cultured at 5,000 cells/well in a 96-well plate for one day. After a

medium change to 0.1% BSA basal medium, the cells are incubated with FGF-2 or with or without an albumin fusion protein of the invention and/or IL-1 $\alpha$  for 24 hours. The supernatants are collected and assayed for IL-6 by ELISA kit (Endogen, Cambridge, MA).

Human lung fibroblasts are cultured with FGF-2 or an albumin fusion protein of the invention for 3 days in basal medium before the addition of Alamar Blue to assess effects on growth of the fibroblasts. FGF-2 should show a stimulation at 10 - 2500 ng/ml which can be used to compare stimulation with the fusion protein of the invention.

#### Cell proliferation based on [3H]thymidine incorporation

The following [3H]Thymidine incorporation assay can be used to measure the effect of a Therapeutic proteins, e.g., growth factor proteins, on the proliferation of cells such as fibroblast cells, epithelial cells or immature muscle cells.

Sub-confluent cultures are arrested in G1 phase by an 18 h incubation in serum-free medium. Therapeutic proteins are then added for 24 h and during the last 4 h, the cultures are labeled with [3H]thymidine, at a final concentration of 0.33  $\mu$ M (25 Ci/mmol, Amersham, Arlington Heights, IL). The incorporated [3H]thymidine is precipitated with ice-cold 10% trichloroacetic acid for 24 h. Subsequently, the cells are rinsed sequentially with ice-cold 10% trichloroacetic acid and then with ice-cold water. Following lysis in 0.5 M NaOH, the lysates and PBS rinses (500 ml) are pooled, and the amount of radioactivity is measured.

#### Parkinson Models.

The loss of motor function in Parkinson's disease is attributed to a deficiency of striatal dopamine resulting from the degeneration of the nigrostriatal dopaminergic projection neurons. An animal model for Parkinson's that has been extensively characterized involves the systemic administration of 1-methyl-4 phenyl 1,2,3,6-tetrahydropyridine (MPTP). In the CNS, MPTP is taken-up by astrocytes and catabolized by monoamine oxidase B to 1-methyl-4-phenyl pyridine (MPP<sup>+</sup>) and released. Subsequently, MPP<sup>+</sup> is actively accumulated in dopaminergic neurons by the high-affinity reuptake transporter for dopamine. MPP<sup>+</sup> is then concentrated in mitochondria by the electrochemical gradient and selectively inhibits nicotinamide adenine disphosphate: ubiquinone oxidoreductionase (complex I), thereby interfering with electron transport and



eventually generating oxygen radicals.

It has been demonstrated in tissue culture paradigms that FGF-2 (basic FGF) has trophic activity towards nigral dopaminergic neurons (Ferrari et al., Dev. Biol. 1989). Recently, Dr. Unsicker's group has demonstrated that administering FGF-2 in gel foam implants in the striatum results in the near complete protection of nigral dopaminergic neurons from the toxicity associated with MPTP exposure (Otto and Unsicker, J. Neuroscience, 1990).

Based on the data with FGF-2, an albumin fusion protein of the invention can be evaluated to determine whether it has an action similar to that of FGF-2 in enhancing dopaminergic neuronal survival *in vitro* and it can also be tested *in vivo* for protection of dopaminergic neurons in the striatum from the damage associated with MPTP treatment. The potential effect of an albumin fusion protein of the invention is first examined *in vitro* in a dopaminergic neuronal cell culture paradigm. The cultures are prepared by dissecting the midbrain floor plate from gestation day 14 Wistar rat embryos. The tissue is dissociated with trypsin and seeded at a density of 200,000 cells/cm<sup>2</sup> on polyorthinine-laminin coated glass coverslips. The cells are maintained in Dulbecco's Modified Eagle's medium and F12 medium containing hormonal supplements (N1). The cultures are fixed with paraformaldehyde after 8 days *in vitro* and are processed for tyrosine hydroxylase, a specific marker for dopaminergic neurons, immunohistochemical staining. Dissociated cell cultures are prepared from embryonic rats. The culture medium is changed every third day and the factors are also added at that time.

Since the dopaminergic neurons are isolated from animals at gestation day 14, a developmental time which is past the stage when the dopaminergic precursor cells are proliferating, an increase in the number of tyrosine hydroxylase immunopositive neurons would represent an increase in the number of dopaminergic neurons surviving *in vitro*. Therefore, if a therapeutic protein of the invention acts to prolong the survival of dopaminergic neurons, it would suggest that the fusion protein may be involved in Parkinson's Disease.

The studies described in this example tested activity of albumin fusion proteins of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of fusion proteins and polynucleotides of the invention (e.g., gene therapy).

**Example 24: The Effect of Albumin Fusion Proteins of the Invention on the Growth of Vascular Endothelial Cells**

On day 1, human umbilical vein endothelial cells (HUVEC) are seeded at  $2-5 \times 10^4$  cells/35 mm dish density in M199 medium containing 4% fetal bovine serum (FBS), 16 units/ml heparin, and 50 units/ml endothelial cell growth supplements (ECGS, Biotechnology, Inc.). On day 2, the medium is replaced with M199 containing 10% FBS, 8 units/ml heparin. An albumin fusion protein of the invention, and positive controls, such as VEGF and basic FGF (bFGF) are added, at varying concentrations. On days 4 and 6, the medium is replaced. On day 8, cell number is determined with a Coulter Counter.

An increase in the number of HUVEC cells indicates that the fusion protein may proliferate vascular endothelial cells, while a decrease in the number of HUVEC cells indicates that the fusion protein inhibits vascular endothelial cells.

The studies described in this example tested activity of an albumin fusion protein of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of a fusion protein and polynucleotides of the invention.

**Example 25: Rat Corneal Wound Healing Model**

This animal model shows the effect of an albumin fusion protein of the invention on neovascularization. The experimental protocol includes:

Making a 1-1.5 mm long incision from the center of cornea into the stromal layer.

Inserting a spatula below the lip of the incision facing the outer corner of the eye.

Making a pocket (its base is 1-1.5 mm from the edge of the eye).

Positioning a pellet, containing 50ng- 5ug of an albumin fusion protein of the invention, within the pocket.

Treatment with an albumin fusion protein of the invention can also be applied topically to the corneal wounds in a dosage range of 20mg - 500mg (daily treatment for five days).

The studies described in this example test the activity of an albumin fusion protein of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of fusion proteins and polynucleotides of the invention (e.g., gene therapy).

**Example 26: Diabetic Mouse and Glucocorticoid-Impaired  
Wound Healing Models**

*Diabetic db+/db+ Mouse Model.*

5 To demonstrate that an albumin fusion protein of the invention accelerates the healing process, the genetically diabetic mouse model of wound healing is used. The full thickness wound healing model in the db+/db+ mouse is a well characterized, clinically relevant and reproducible model of impaired wound healing. Healing of the diabetic wound is dependent on formation of granulation tissue and re-epithelialization rather than  
10 contraction (Gartner, M.H. *et al.*, *J. Surg. Res.* 52:389 (1992); Greenhalgh, D.G. *et al.*, *Am. J. Pathol.* 136:1235 (1990)).

The diabetic animals have many of the characteristic features observed in Type II diabetes mellitus. Homozygous (db+/db+) mice are obese in comparison to their normal heterozygous (db+/+m) littermates. Mutant diabetic (db+/db+) mice have a single  
15 autosomal recessive mutation on chromosome 4 (db+) (Coleman *et al.* *Proc. Natl. Acad. Sci. USA* 77:283-293 (1982)). Animals show polyphagia, polydipsia and polyuria. Mutant diabetic mice (db+/db+) have elevated blood glucose, increased or normal insulin levels, and suppressed cell-mediated immunity (Mandel *et al.*, *J. Immunol.* 120:1375 (1978); Debray-Sachs, M. *et al.*, *Clin. Exp. Immunol.* 51(1):1-7 (1983); Leiter *et al.*, *Am. J. of*  
20 *Pathol.* 114:46-55 (1985)). Peripheral neuropathy, myocardial complications, and microvascular lesions, basement membrane thickening and glomerular filtration abnormalities have been described in these animals (Norido, F. *et al.*, *Exp. Neurol.* 83(2):221-232 (1984); Robertson *et al.*, *Diabetes* 29(1):60-67 (1980); Giacomelli *et al.*, *Lab Invest.* 40(4):460-473 (1979); Coleman, D.L., *Diabetes* 31 (Suppl):1-6 (1982)). These  
25 homozygous diabetic mice develop hyperglycemia that is resistant to insulin analogous to human type II diabetes (Mandel *et al.*, *J. Immunol.* 120:1375-1377 (1978)).

The characteristics observed in these animals suggests that healing in this model may be similar to the healing observed in human diabetes (Greenhalgh, *et al.*, *Am. J. of Pathol.* 136:1235-1246 (1990)).

30 Genetically diabetic female C57BL/KsJ (db+/db+) mice and their non-diabetic (db+/+m) heterozygous littermates are used in this study (Jackson Laboratories). The animals are purchased at 6 weeks of age and are 8 weeks old at the beginning of the study.

Animals are individually housed and received food and water ad libitum. All manipulations are performed using aseptic techniques. The experiments are conducted according to the rules and guidelines of Human Genome Sciences, Inc. Institutional Animal Care and Use Committee and the Guidelines for the Care and Use of Laboratory  
5 Animals.

Wounding protocol is performed according to previously reported methods (Tsuboi, R. and Rifkin, D.B., *J. Exp. Med.* 172:245-251 (1990)). Briefly, on the day of wounding, animals are anesthetized with an intraperitoneal injection of Avertin (0.01 mg/mL), 2,2,2-tribromoethanol and 2-methyl-2-butanol dissolved in deionized water. The  
10 dorsal region of the animal is shaved and the skin washed with 70% ethanol solution and iodine. The surgical area is dried with sterile gauze prior to wounding. An 8 mm full-thickness wound is then created using a Keyes tissue punch. Immediately following wounding, the surrounding skin is gently stretched to eliminate wound expansion. The wounds are left open for the duration of the experiment. Application of the treatment is  
15 given topically for 5 consecutive days commencing on the day of wounding. Prior to treatment, wounds are gently cleansed with sterile saline and gauze sponges.

Wounds are visually examined and photographed at a fixed distance at the day of surgery and at two day intervals thereafter. Wound closure is determined by daily measurement on days 1-5 and on day 8. Wounds are measured horizontally and vertically  
20 using a calibrated Jameson caliper. Wounds are considered healed if granulation tissue is no longer visible and the wound is covered by a continuous epithelium.

An albumin fusion protein of the invention is administered using at a range different doses, from 4mg to 500mg per wound per day for 8 days in vehicle. Vehicle control groups received 50mL of vehicle solution.

25 Animals are euthanized on day 8 with an intraperitoneal injection of sodium pentobarbital (300mg/kg). The wounds and surrounding skin are then harvested for histology and immunohistochemistry. Tissue specimens are placed in 10% neutral buffered formalin in tissue cassettes between biopsy sponges for further processing.

30 Three groups of 10 animals each (5 diabetic and 5 non-diabetic controls) are evaluated: 1) Vehicle placebo control, 2) untreated group, and 3) treated group.

Wound closure is analyzed by measuring the area in the vertical and horizontal axis and obtaining the total square area of the wound. Contraction is then estimated by

establishing the differences between the initial wound area (day 0) and that of post treatment (day 8). The wound area on day 1 is 64mm<sup>2</sup>, the corresponding size of the dermal punch. Calculations are made using the following formula:

5 [Open area on day 8] - [Open area on day 1] / [Open area on day 1]

Specimens are fixed in 10% buffered formalin and paraffin embedded blocks are sectioned perpendicular to the wound surface (5mm) and cut using a Reichert-Jung microtome. Routine hematoxylin-eosin (H&E) staining is performed on cross-sections of bisected wounds. Histologic examination of the wounds are used to assess whether the healing process and the morphologic appearance of the repaired skin is altered by treatment with an albumin fusion protein of the invention. This assessment included verification of the presence of cell accumulation, inflammatory cells, capillaries, fibroblasts, re-epithelialization and epidermal maturity (Greenhalgh, D.G. *et al.*, *Am. J. Pathol.* 136:1235 (1990)). A calibrated lens micrometer is used by a blinded observer.

Tissue sections are also stained immunohistochemically with a polyclonal rabbit anti-human keratin antibody using ABC Elite detection system. Human skin is used as a positive tissue control while non-immune IgG is used as a negative control. Keratinocyte growth is determined by evaluating the extent of reepithelialization of the wound using a calibrated lens micrometer.

Proliferating cell nuclear antigen/cyclin (PCNA) in skin specimens is demonstrated by using anti-PCNA antibody (1:50) with an ABC Elite detection system. Human colon cancer served as a positive tissue control and human brain tissue is used as a negative tissue control. Each specimen included a section with omission of the primary antibody and substitution with non-immune mouse IgG. Ranking of these sections is based on the extent of proliferation on a scale of 0-8, the lower side of the scale reflecting slight proliferation to the higher side reflecting intense proliferation.

Experimental data are analyzed using an unpaired t test. A p value of  $< 0.05$  is considered significant.

### Steroid Impaired Rat Model

The inhibition of wound healing by steroids has been well documented in various

*in vitro* and *in vivo* systems (Wahl, Glucocorticoids and Wound healing. In: Anti-Inflammatory Steroid Action: Basic and Clinical Aspects. 280-302 (1989); Wahlet *et al.*, *J. Immunol.* 115: 476-481 (1975); Werb *et al.*, *J. Exp. Med.* 147:1684-1694 (1978)). Glucocorticoids retard wound healing by inhibiting angiogenesis, decreasing vascular permeability (Ebert *et al.*, *Am. Intern. Med.* 37:701-705 (1952)), fibroblast proliferation, and collagen synthesis (Beck *et al.*, *Growth Factors.* 5: 295-304 (1991); Haynes *et al.*, *J. Clin. Invest.* 61: 703-797 (1978)) and producing a transient reduction of circulating monocytes (Haynes *et al.*, *J. Clin. Invest.* 61: 703-797 (1978); Wahl, "Glucocorticoids and wound healing", In: Antiinflammatory Steroid Action: Basic and Clinical Aspects, Academic Press, New York, pp. 280-302 (1989)). The systemic administration of steroids to impaired wound healing is a well establish phenomenon in rats (Beck *et al.*, *Growth Factors.* 5: 295-304 (1991); Haynes *et al.*, *J. Clin. Invest.* 61: 703-797 (1978); Wahl, "Glucocorticoids and wound healing", In: Antiinflammatory Steroid Action: Basic and Clinical Aspects, Academic Press, New York, pp. 280-302 (1989); Pierce *et al.*, *Proc. Natl. Acad. Sci. USA* 86: 2229-2233 (1989)).

To demonstrate that an albumin fusion protein of the invention can accelerate the healing process, the effects of multiple topical applications of the fusion protein on full thickness excisional skin wounds in rats in which healing has been impaired by the systemic administration of methylprednisolone is assessed.

Young adult male Sprague Dawley rats weighing 250-300 g (Charles River Laboratories) are used in this example. The animals are purchased at 8 weeks of age and are 9 weeks old at the beginning of the study. The healing response of rats is impaired by the systemic administration of methylprednisolone (17mg/kg/rat intramuscularly) at the time of wounding. Animals are individually housed and received food and water *ad libitum*. All manipulations are performed using aseptic techniques. This study is conducted according to the rules and guidelines of Human Genome Sciences, Inc. Institutional Animal Care and Use Committee and the Guidelines for the Care and Use of Laboratory Animals.

The wounding protocol is followed according to that described above. On the day of wounding, animals are anesthetized with an intramuscular injection of ketamine (50 mg/kg) and xylazine (5 mg/kg). The dorsal region of the animal is shaved and the skin washed with 70% ethanol and iodine solutions. The surgical area is dried with sterile

gauze prior to wounding. An 8 mm full-thickness wound is created using a Keyes tissue punch. The wounds are left open for the duration of the experiment. Applications of the testing materials are given topically once a day for 7 consecutive days commencing on the day of wounding and subsequent to methylprednisolone administration. Prior to  
5 treatment, wounds are gently cleansed with sterile saline and gauze sponges.

Wounds are visually examined and photographed at a fixed distance at the day of wounding and at the end of treatment. Wound closure is determined by daily measurement on days 1-5 and on day 8. Wounds are measured horizontally and vertically using a calibrated Jameson caliper. Wounds are considered healed if granulation tissue is no  
10 longer visible and the wound is covered by a continuous epithelium.

The fusion protein of the invention is administered using at a range different doses, from 4mg to 500mg per wound per day for 8 days in vehicle. Vehicle control groups received 50mL of vehicle solution.

Animals are euthanized on day 8 with an intraperitoneal injection of sodium  
15 pentobarbital (300mg/kg). The wounds and surrounding skin are then harvested for histology. Tissue specimens are placed in 10% neutral buffered formalin in tissue cassettes between biopsy sponges for further processing.

Three groups of 10 animals each (5 with methylprednisolone and 5 without glucocorticoid) are evaluated: 1) Untreated group 2) Vehicle placebo control 3) treated  
20 groups.

Wound closure is analyzed by measuring the area in the vertical and horizontal axis and obtaining the total area of the wound. Closure is then estimated by establishing the differences between the initial wound area (day 0) and that of post treatment (day 8). The wound area on day 1 is 64mm<sup>2</sup>, the corresponding size of the dermal punch.  
25 Calculations are made using the following formula:

$$[\text{Open area on day 8}] - [\text{Open area on day 1}] / [\text{Open area on day 1}]$$

Specimens are fixed in 10% buffered formalin and paraffin embedded blocks are  
30 sectioned perpendicular to the wound surface (5mm) and cut using an Olympus microtome. Routine hematoxylin-eosin (H&E) staining is performed on cross-sections of bisected wounds. Histologic examination of the wounds allows assessment of whether the

healing process and the morphologic appearance of the repaired skin is improved by treatment with an albumin fusion protein of the invention. A calibrated lens micrometer is used by a blinded observer to determine the distance of the wound gap.

Experimental data are analyzed using an unpaired t test. A p value of  $< 0.05$  is considered significant.

The studies described in this example tested activity of an albumin fusion protein of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of fusion proteins and polynucleotides of the invention (e.g., gene therapy).

#### Example 27: Lymphedema Animal Model

The purpose of this experimental approach is to create an appropriate and consistent lymphedema model for testing the therapeutic effects of an albumin fusion protein of the invention in lymphangiogenesis and re-establishment of the lymphatic circulatory system in the rat hind limb. Effectiveness is measured by swelling volume of the affected limb, quantification of the amount of lymphatic vasculature, total blood plasma protein, and histopathology. Acute lymphedema is observed for 7-10 days. Perhaps more importantly, the chronic progress of the edema is followed for up to 3-4 weeks.

Prior to beginning surgery, blood sample is drawn for protein concentration analysis. Male rats weighing approximately ~350g are dosed with Pentobarbital. Subsequently, the right legs are shaved from knee to hip. The shaved area is swabbed with gauze soaked in 70% EtOH. Blood is drawn for serum total protein testing. Circumference and volumetric measurements are made prior to injecting dye into paws after marking 2 measurement levels (0.5 cm above heel, at mid-pt of dorsal paw). The intradermal dorsum of both right and left paws are injected with 0.05 ml of 1% Evan's Blue. Circumference and volumetric measurements are then made following injection of dye into paws.

Using the knee joint as a landmark, a mid-leg inguinal incision is made circumferentially allowing the femoral vessels to be located. Forceps and hemostats are used to dissect and separate the skin flaps. After locating the femoral vessels, the lymphatic vessel that runs along side and underneath the vessel(s) is located. The main



lymphatic vessels in this area are then electrically coagulated or suture ligated.

Using a microscope, muscles in back of the leg (near the semitendinosus and adductors) are bluntly dissected. The popliteal lymph node is then located. The 2 proximal and 2 distal lymphatic vessels and distal blood supply of the popliteal node are then ligated by suturing. The popliteal lymph node, and any accompanying adipose tissue, is then removed by cutting connective tissues.

Care is taken to control any mild bleeding resulting from this procedure. After lymphatics are occluded, the skin flaps are sealed by using liquid skin (Vetbond) (AJ Buck). The separated skin edges are sealed to the underlying muscle tissue while leaving a gap of ~0.5 cm around the leg. Skin also may be anchored by suturing to underlying muscle when necessary.

To avoid infection, animals are housed individually with mesh (no bedding). Recovering animals are checked daily through the optimal edematous peak, which typically occurred by day 5-7. The plateau edematous peak are then observed. To evaluate the intensity of the lymphedema, the circumference and volumes of 2 designated places on each paw before operation and daily for 7 days are measured. The effect of plasma proteins on lymphedema is determined and whether protein analysis is a useful testing perimeter is also investigated. The weights of both control and edematous limbs are evaluated at 2 places. Analysis is performed in a blind manner.

Circumference Measurements: Under brief gas anesthetic to prevent limb movement, a cloth tape is used to measure limb circumference. Measurements are done at the ankle bone and dorsal paw by 2 different people and those 2 readings are averaged. Readings are taken from both control and edematous limbs.

Volumetric Measurements: On the day of surgery, animals are anesthetized with Pentobarbital and are tested prior to surgery. For daily volumetrics animals are under brief halothane anesthetic (rapid immobilization and quick recovery), and both legs are shaved and equally marked using waterproof marker on legs. Legs are first dipped in water, then dipped into instrument to each marked level then measured by Buxco edema software(Chen/Victor). Data is recorded by one person, while the other is dipping the limb to marked area.

Blood-plasma protein measurements: Blood is drawn, spun, and serum separated prior to surgery and then at conclusion for total protein and  $\text{Ca}^{2+}$  comparison.

Limb Weight Comparison: After drawing blood, the animal is prepared for tissue collection. The limbs are amputated using a quillitine, then both experimental and control legs are cut at the ligature and weighed. A second weighing is done as the tibio-cacaneal joint is disarticulated and the foot is weighed.

5        Histological Preparations: The transverse muscle located behind the knee (popliteal) area is dissected and arranged in a metal mold, filled with freezeGel, dipped into cold methylbutane, placed into labeled sample bags at - 80EC until sectioning. Upon sectioning, the muscle is observed under fluorescent microscopy for lymphatics..

10       The studies described in this example tested activity of fusion proteins of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of fusion protein and polynucleotides of the invention (e.g., gene therapy).

**Example 28: Suppression of TNF alpha-Induced Adhesion Molecule Expression by an Albumin Fusion Protein of the Invention**

15       The recruitment of lymphocytes to areas of inflammation and angiogenesis involves specific receptor-ligand interactions between cell surface adhesion molecules (CAMs) on lymphocytes and the vascular endothelium. The adhesion process, in both normal and pathological settings, follows a multi-step cascade that involves intercellular adhesion molecule-1 (ICAM-1), vascular cell adhesion molecule-1 (VCAM-1), and  
20       endothelial leukocyte adhesion molecule-1 (E-selectin) expression on endothelial cells (EC). The expression of these molecules and others on the vascular endothelium determines the efficiency with which leukocytes may adhere to the local vasculature and extravasate into the local tissue during the development of an inflammatory response. The local concentration of cytokines and growth factor participate in the modulation of the  
25       expression of these CAMs.

Tumor necrosis factor alpha (TNF-a), a potent proinflammatory cytokine, is a stimulator of all three CAMs on endothelial cells and may be involved in a wide variety of inflammatory responses, often resulting in a pathological outcome.

30       The potential of an albumin fusion protein of the invention to mediate a suppression of TNF-a induced CAM expression can be examined. A modified ELISA assay which uses ECs as a solid phase absorbent is employed to measure the amount of CAM expression on TNF-a treated ECs when co-stimulated with a member of the FGF

family of proteins.

To perform the experiment, human umbilical vein endothelial cell (HUVEC) cultures are obtained from pooled cord harvests and maintained in growth medium (EGM-2; Clonetics, San Diego, CA) supplemented with 10% FCS and 1% penicillin/streptomycin in a 37 degree C humidified incubator containing 5% CO<sub>2</sub>. HUVECs are seeded in 96-well plates at concentrations of  $1 \times 10^4$  cells/well in EGM medium at 37 degree C for 18-24 hrs or until confluent. The monolayers are subsequently washed 3 times with a serum-free solution of RPMI-1640 supplemented with 100 U/ml penicillin and 100 mg/ml streptomycin, and treated with a given cytokine and/or growth factor(s) for 24 h at 37 degree C. Following incubation, the cells are then evaluated for CAM expression.

Human Umbilical Vein Endothelial cells (HUVECs) are grown in a standard 96 well plate to confluence. Growth medium is removed from the cells and replaced with 90 ul of 199 Medium (10% FBS). Samples for testing and positive or negative controls are added to the plate in triplicate (in 10 ul volumes). Plates are incubated at 37 degree C for either 5 h (selectin and integrin expression) or 24 h (integrin expression only). Plates are aspirated to remove medium and 100 ul of 0.1% paraformaldehyde-PBS(with Ca<sup>++</sup> and Mg<sup>++</sup>) is added to each well. Plates are held at 4°C for 30 min.

Fixative is then removed from the wells and wells are washed 1X with PBS(+Ca,Mg)+0.5% BSA and drained. Do not allow the wells to dry. Add 10 ul of diluted primary antibody to the test and control wells. Anti-ICAM-1-Biotin, Anti-VCAM-1-Biotin and Anti-E-selectin-Biotin are used at a concentration of 10 µg/ml (1:10 dilution of 0.1 mg/ml stock antibody). Cells are incubated at 37°C for 30 min. in a humidified environment. Wells are washed X3 with PBS(+Ca,Mg)+0.5% BSA.

Then add 20 µl of diluted ExtrAvidin-Alkaline Phosphatase (1:5,000 dilution) to each well and incubated at 37°C for 30 min. Wells are washed X3 with PBS(+Ca,Mg)+0.5% BSA. 1 tablet of p-Nitrophenol Phosphate pNPP is dissolved in 5 ml of glycine buffer (pH 10.4). 100 µl of pNPP substrate in glycine buffer is added to each test well. Standard wells in triplicate are prepared from the working dilution of the ExtrAvidin-Alkaline Phosphatase in glycine buffer:  $1:5,000$  ( $10^0$ )  $> 10^{-0.5} > 10^{-1} > 10^{-1.5}$ . 5 µl of each dilution is added to triplicate wells and the resulting AP content in each well is 5.50 ng, 1.74 ng, 0.55 ng, 0.18 ng. 100 µl of pNPP reagent must then be added to each of

the standard wells. The plate must be incubated at 37°C for 4h. A volume of 50 µl of 3M NaOH is added to all wells. The results are quantified on a plate reader at 405 nm. The background subtraction option is used on blank wells filled with glycine buffer only. The template is set up to indicate the concentration of AP-conjugate in each standard well [ 5.50 ng; 1.74 ng; 0.55 ng; 0.18 ng]. Results are indicated as amount of bound AP-conjugate in each sample.

The studies described in this example tested activity of fusion proteins of the invention. However, one skilled in the art could easily modify the exemplified studies to test the activity of fusion proteins and polynucleotides of the invention (e.g., gene therapy).

#### **Example 29: Construction of GAS Reporter Construct**

One signal transduction pathway involved in the differentiation and proliferation of cells is called the Jaks-STATs pathway. Activated proteins in the Jaks-STATs pathway bind to gamma activation site "GAS" elements or interferon-sensitive responsive element ("ISRE"), located in the promoter of many genes. The binding of a protein to these elements alter the expression of the associated gene.

GAS and ISRE elements are recognized by a class of transcription factors called Signal Transducers and Activators of Transcription, or "STATs." There are six members of the STATs family. Stat1 and Stat3 are present in many cell types, as is Stat2 (as response to IFN-alpha is widespread). Stat4 is more restricted and is not in many cell types though it has been found in T helper class I, cells after treatment with IL-12. Stat5 was originally called mammary growth factor, but has been found at higher concentrations in other cells including myeloid cells. It can be activated in tissue culture cells by many cytokines.

The STATs are activated to translocate from the cytoplasm to the nucleus upon tyrosine phosphorylation by a set of kinases known as the Janus Kinase ("Jaks") family. Jaks represent a distinct family of soluble tyrosine kinases and include Tyk2, Jak1, Jak2, and Jak3. These kinases display significant sequence similarity and are generally catalytically inactive in resting cells.

The Jaks are activated by a wide range of receptors summarized in the Table below. (Adapted from review by Schidler and Darnell, Ann. Rev. Biochem. 64:621-51

(1995)). A cytokine receptor family, capable of activating Jaks, is divided into two groups: (a) Class 1 includes receptors for IL-2, IL-3, IL-4, IL-6, IL-7, IL-9, IL-11, IL-12, IL-15, Epo, PRL, GH, G-CSF, GM-CSF, LIF, CNTF, and thrombopoietin; and (b) Class 2 includes IFN-a, IFN-g, and IL-10. The Class 1 receptors share a conserved cysteine motif  
5 (a set of four conserved cysteines and one tryptophan) and a WSXWS motif (a membrane proximal region encoding Trp-Ser-Xaa-Trp-Ser (SEQ ID NO: 37)).

Thus, on binding of a ligand to a receptor, Jaks are activated, which in turn activate STATs, which then translocate and bind to GAS elements. This entire process is encompassed in the Jaks-STATs signal transduction pathway. Therefore, activation of the  
10 Jaks-STATs pathway, reflected by the binding of the GAS or the ISRE element, can be used to indicate proteins involved in the proliferation and differentiation of cells. For example, growth factors and cytokines are known to activate the Jaks-STATs pathway (See Table below). Thus, by using GAS elements linked to reporter molecules, activators of the Jaks-STATs pathway can be identified.

15

<u>Ligand</u>	<u>JAKs</u>		<u>Jak2</u>	<u>STATs</u>		<u>GAS(elements) or ISRE</u>
	<u>tyk2</u>	<u>Jak1</u>		<u>Jak3</u>		
<u>IFN family</u>						
IFN-a/B	+	+	-	-	1,2,3	ISRE
IFN-g		+	+	-	1	GAS (IRF1>Lys6>IFP)
IL-10	+	?	?	-	1,3	
<u>gp130 family</u>						
IL-6 (Pleiotropic)	+	+	+	?	1,3	GAS (IRF1>Lys6>IFP)
IL-11(Pleiotropic)	?	+	?	?	1,3	
OnM(Pleiotropic)	?	+	+	?	1,3	
LIF(Pleiotropic)	?	+	+	?	1,3	
CNTF(Pleiotropic)	-/+	+	+	?	1,3	
G-CSF(Pleiotropic)	?	+	?	?	1,3	
IL-12(Pleiotropic)	+	-	+	+	1,3	
<u>g-C family</u>						
IL-2 (lymphocytes)	-	+	-	+	1,3,5	GAS
IL-4 (lymph/myeloid)	-	+	-	+	6	GAS (IRF1 = IFP
>>Ly6)(IgH)						
IL-7 (lymphocytes)	-	+	-	+	5	GAS
IL-9 (lymphocytes)	-	+	-	+	5	GAS
IL-13 (lymphocyte)	-	+	?	?	6	GAS
IL-15	?	+	?	+	5	GAS
<u>gp140 family</u>						
IL-3 (myeloid)	-	-	+	-	5	GAS
(IRF1>IFP>>Ly6)						
IL-5 (myeloid)	-	-	+	-	5	GAS
GM-CSF (myeloid)	-	-	+	-	5	GAS
<u>Growth hormone family</u>						
GH	?	-	+	-	5	
PRL	?	+/-	+	-	1,3,5	
EPO	?	-	+	-	5	GAS(B-
CAS>IRF1=IFP>>Ly6)						
<u>Receptor Tyrosine Kinases</u>						
EGF	?	+	+	-	1,3	GAS (IRF1)
PDGF	?	+	+	-	1,3	
CSF-1	?	+	+	-	1,3	GAS (not IRF1)

To construct a synthetic GAS containing promoter element, which is used in the Biological Assays described in Examples 32-33, a PCR based strategy is employed to generate a GAS-SV40 promoter sequence. The 5' primer contains four tandem copies of the GAS binding site found in the IRF1 promoter and previously demonstrated to bind  
 5 STATs upon induction with a range of cytokines (Rothman et al., Immunity 1:457-468 (1994).), although other GAS or ISRE elements can be used instead. The 5' primer also contains 18bp of sequence complementary to the SV40 early promoter sequence and is flanked with an XhoI site. The sequence of the 5' primer is:

5':GCGCCTCGAGATTTCCCGAAATCTAGATTTCCCGAAATGATTTC  
 10 CCGAAATGATTTCCTCGAAATATCTGCCATCTCAATTAG:3' (SEQ ID NO: 38)

The downstream primer is complementary to the SV40 promoter and is flanked with a Hind III site: 5':GCGGCAAGCTTTTGTCAAAGCCTAGGC:3' (SEQ ID NO: 39)

PCR amplification is performed using the SV40 promoter template present in the B-gal:promoter plasmid obtained from Clontech. The resulting PCR fragment is digested  
 15 with XhoI/Hind III and subcloned into BLSK2-. (Stratagene.) Sequencing with forward and reverse primers confirms that the insert contains the following sequence:

5':CTCGAGATTTCCCGAAATCTAGATTTCCCGAAATGATTTCCTCGA  
 AATGATTTCCTCGAAATATCTGCCATCTCAATTAGTCAGCAACCATAGTCCCG  
 CCCCTAACTCCGCCCATCCCGCCCCTAACTCCGCCCAGTTCCGCCCATTCTCCG  
 20 CCCCATGGCTGACTAATTTTTTTTATTTATGCAGAGGCCGAGGCCGCCTCGGCC  
 TCTGAGCTATTCCAGAAGTAGTGAGGAGGCTTTTTTGGAGGCCTAGGCTTTTG  
 CAAAAAGCTT:3' (SEQ ID NO: 40)

With this GAS promoter element linked to the SV40 promoter, a GAS:SEAP2 reporter construct is next engineered. Here, the reporter molecule is a secreted alkaline  
 25 phosphatase, or "SEAP." Clearly, however, any reporter molecule can be instead of SEAP, in this or in any of the other Examples. Well known reporter molecules that can be used instead of SEAP include chloramphenicol acetyltransferase (CAT), luciferase, alkaline phosphatase, B-galactosidase, green fluorescent protein (GFP), or any protein detectable by an antibody.

30 The above sequence confirmed synthetic GAS-SV40 promoter element is subcloned into the pSEAP-Promoter vector obtained from Clontech using HindIII and XhoI, effectively replacing the SV40 promoter with the amplified GAS:SV40 promoter

element, to create the GAS-SEAP vector. However, this vector does not contain a neomycin resistance gene, and therefore, is not preferred for mammalian expression systems.

Thus, in order to generate mammalian stable cell lines expressing the GAS-SEAP reporter, the GAS-SEAP cassette is removed from the GAS-SEAP vector using SalI and NotI, and inserted into a backbone vector containing the neomycin resistance gene, such as pGFP-1 (Clontech), using these restriction sites in the multiple cloning site, to create the GAS-SEAP/Neo vector. Once this vector is transfected into mammalian cells, this vector can then be used as a reporter molecule for GAS binding as described in Examples 32-33.

Other constructs can be made using the above description and replacing GAS with a different promoter sequence. For example, construction of reporter molecules containing EGR and NF-KB promoter sequences are described in Examples 34 and 35. However, many other promoters can be substituted using the protocols described in these Examples. For instance, SRE, IL-2, NFAT, or Osteocalcin promoters can be substituted, alone or in combination (e.g., GAS/NF-KB/EGR, GAS/NF-KB, IL-2/NFAT, or NF-KB/GAS). Similarly, other cell lines can be used to test reporter construct activity, such as HELA (epithelial), HUVEC (endothelial), Reh (B-cell), Saos-2 (osteoblast), HUVAC (aortic), or Cardiomyocyte.

### **Example 30: Assay for SEAP Activity**

As a reporter molecule for the assays described in examples disclosed herein, SEAP activity is assayed using the Tropix Phospho-light Kit (Cat. BP-400) according to the following general procedure. The Tropix Phospho-light Kit supplies the Dilution, Assay, and Reaction Buffers used below.

Prime a dispenser with the 2.5x Dilution Buffer and dispense 15 ul of 2.5x dilution buffer into Optiplates containing 35 ul of a solution containing an albumin fusion protein of the invention. Seal the plates with a plastic sealer and incubate at 65 degree C for 30 min. Separate the Optiplates to avoid uneven heating.

Cool the samples to room temperature for 15 minutes. Empty the dispenser and prime with the Assay Buffer. Add 50 ml Assay Buffer and incubate at room temperature 5 min. Empty the dispenser and prime with the Reaction Buffer (see the Table below). Add 50 ul Reaction Buffer and incubate at room temperature for 20 minutes. Since the



intensity of the chemiluminescent signal is time dependent, and it takes about 10 minutes to read 5 plates on a luminometer, thus one should treat 5 plates at each time and start the second set 10 minutes later.

- Read the relative light unit in the luminometer. Set H12 as blank, and print the results. An increase in chemiluminescence indicates reporter activity.

Reaction Buffer Formulation:

# plates	of (ml)	Rxn buffer diluent (ml)	CSPD
10		60	3
11		65	3.25
12		70	3.5
13		75	3.75
14		80	4
15		85	4.25
16		90	4.5
17		95	4.75
18		100	5
19		105	5.25
20		110	5.5
21		115	5.75
22		120	6
23		125	6.25
24		130	6.5
25		135	6.75
26		140	7
27		145	7.25
28		150	7.5
29		155	7.75
30		160	8
31		165	8.25
32		170	8.5

33	175	8.75
34	180	9
35	185	9.25
36	190	9.5
37	195	9.75
38	200	10
39	205	10.25
40	210	10.5
41	215	10.75
42	220	11
43	225	11.25
44	230	11.5
45	235	11.75
46	240	12
47	245	12.25
48	250	12.5
49	255	12.75
50	260	13

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### Example 31: Assay Identifying Neuronal Activity.

When cells undergo differentiation and proliferation, a group of genes are activated through many different signal transduction pathways. One of these genes, EGR1 (early growth response gene 1), is induced in various tissues and cell types upon activation. The promoter of EGR1 is responsible for such induction. Using the EGR1 promoter linked to reporter molecules, the ability of fusion proteins of the invention to activate cells can be assessed.

Particularly, the following protocol is used to assess neuronal activity in PC12 cell lines. PC12 cells (rat phenochromocytoma cells) are known to proliferate and/or differentiate by activation with a number of mitogens, such as TPA (tetradecanoyl phorbol acetate), NGF (nerve growth factor), and EGF (epidermal growth factor). The EGR1 gene expression is activated during this treatment. Thus, by stably transfecting PC12 cells with

a construct containing an EGR promoter linked to SEAP reporter, activation of PC12 cells by an albumin fusion protein of the present invention can be assessed.

The EGR/SEAP reporter construct can be assembled by the following protocol. The EGR-1 promoter sequence (-633 to +1)(Sakamoto K et al., Oncogene 6:867-871 (1991)) can be PCR amplified from human genomic DNA using the following primers:

5' GCGCTCGAGGGATGACAGCGATAGAACCCCGG-3' (SEQ ID NO: 41)

5' GCGAAGCTTCGCGACTCCCCGGATCCGCCTC-3' (SEQ ID NO: 42)

Using the GAS:SEAP/Neo vector produced in Example 29, EGR1 amplified product can then be inserted into this vector. Linearize the GAS:SEAP/Neo vector using restriction enzymes XhoI/HindIII, removing the GAS/SV40 stuffer. Restrict the EGR1 amplified product with these same enzymes. Ligate the vector and the EGR1 promoter.

To prepare 96 well-plates for cell culture, two mls of a coating solution (1:30 dilution of collagen type I (Upstate Biotech Inc. Cat#08-115) in 30% ethanol (filter sterilized)) is added per one 10 cm plate or 50 ml per well of the 96-well plate, and allowed to air dry for 2 hr.

PC12 cells are routinely grown in RPMI-1640 medium (Bio Whittaker) containing 10% horse serum (JRH BIOSCIENCES, Cat. # 12449-78P), 5% heat-inactivated fetal bovine serum (FBS) supplemented with 100 units/ml penicillin and 100 ug/ml streptomycin on a precoated 10 cm tissue culture dish. One to four split is done every three to four days. Cells are removed from the plates by scraping and resuspended with pipetting up and down for more than 15 times.

Transfect the EGR/SEAP/Neo construct into PC12 using techniques known in the art. EGR-SEAP/PC12 stable cells are obtained by growing the cells in 300 ug/ml G418. The G418-free medium is used for routine growth but every one to two months, the cells should be re-grown in 300 ug/ml G418 for couple of passages.

To assay for neuronal activity, a 10 cm plate with cells around 70 to 80% confluent is screened by removing the old medium. Wash the cells once with PBS (Phosphate buffered saline). Then starve the cells in low serum medium (RPMI-1640 containing 1% horse serum and 0.5% FBS with antibiotics) overnight.

The next morning, remove the medium and wash the cells with PBS. Scrape off the cells from the plate, suspend the cells well in 2 ml low serum medium. Count the cell number and add more low serum medium to reach final cell density as  $5 \times 10^5$  cells/ml.

Add 200 ul of the cell suspension to each well of 96-well plate (equivalent to  $1 \times 10^5$  cells/well). Add a series of different concentrations of an albumin fusion protein of the invention, 37 degree C for 48 to 72 hr. As a positive control, a growth factor known to activate PC12 cells through EGR can be used, such as 50 ng/ul of Neuronal Growth Factor (NGF). Over fifty-fold induction of SEAP is typically seen in the positive control wells. SEAP assay may be routinely performed using techniques known in the art and/or as described in Example 30.

**Example 32: Assay for T-cell Activity.**

The following protocol is used to assess T-cell activity by identifying factors, and determining whether an albumin fusion protein of the invention proliferates and/or differentiates T-cells. T-cell activity is assessed using the GAS/SEAP/Neo construct produced in Example 29. Thus, factors that increase SEAP activity indicate the ability to activate the Jaks-STATS signal transduction pathway. The T-cell used in this assay is Jurkat T-cells (ATCC Accession No. TIB-152), although Molt-3 cells (ATCC Accession No. CRL-1552) and Molt-4 cells (ATCC Accession No. CRL-1582) cells can also be used.

Jurkat T-cells are lymphoblastic CD4+ Th1 helper cells. In order to generate stable cell lines, approximately 2 million Jurkat cells are transfected with the GAS-SEAP/neo vector using DMRIE-C (Life Technologies)(transfection procedure described below).

The transfected cells are seeded to a density of approximately 20,000 cells per well and transfectants resistant to 1 mg/ml gentamicin selected. Resistant colonies are expanded and then tested for their response to increasing concentrations of interferon gamma. The dose response of a selected clone is demonstrated.

Specifically, the following protocol will yield sufficient cells for 75 wells containing 200 ul of cells. Thus, it is either scaled up, or performed in multiple to generate sufficient cells for multiple 96 well plates. Jurkat cells are maintained in RPMI + 10% serum with 1%Pen-Strep. Combine 2.5 mls of OPTI-MEM (Life Technologies) with 10 ug of plasmid DNA in a T25 flask. Add 2.5 ml OPTI-MEM containing 50 ul of DMRIE-C and incubate at room temperature for 15-45 mins.

During the incubation period, count cell concentration, spin down the required number of cells ( $10^7$  per transfection), and resuspend in OPTI-MEM to a final concentration of  $10^7$  cells/ml. Then add 1ml of  $1 \times 10^7$  cells in OPTI-MEM to T25 flask

and incubate at 37 degree C for 6 hrs. After the incubation, add 10 ml of RPMI + 15% serum.

The Jurkat:GAS-SEAP stable reporter lines are maintained in RPMI + 10% serum, 1 mg/ml Gentamicin, and 1% Pen-Strep. These cells are treated with varying concentrations of one or more fusion proteins of the present invention.

On the day of treatment with the fusion protein, the cells should be washed and resuspended in fresh RPMI + 10% serum to a density of 500,000 cells per ml. The exact number of cells required will depend on the number of fusion proteins and the number of different concentrations of fusion proteins being screened. For one 96 well plate, approximately 10 million cells (for 10 plates, 100 million cells) are required.

The well dishes containing Jurkat cells treated with the fusion protein are placed in an incubator for 48 hrs (note: this time is variable between 48-72 hrs). 35 ul samples from each well are then transferred to an opaque 96 well plate using a 12 channel pipette. The opaque plates should be covered (using sellophane covers) and stored at -20 degree C until SEAP assays are performed according to Example 30. The plates containing the remaining treated cells are placed at 4 degree C and serve as a source of material for repeating the assay on a specific well if desired.

As a positive control, 100 Unit/ml interferon gamma can be used which is known to activate Jurkat T cells. Over 30 fold induction is typically observed in the positive control wells.

The above protocol may be used in the generation of both transient, as well as, stable transfected cells, which would be apparent to those of skill in the art.

### **Example 33: Assay for T-cell Activity**

NF-KB (Nuclear Factor KB) is a transcription factor activated by a wide variety of agents including the inflammatory cytokines IL-1 and TNF, CD30 and CD40, lymphotoxin-alpha and lymphotoxin-beta, by exposure to LPS or thrombin, and by expression of certain viral gene products. As a transcription factor, NF-KB regulates the expression of genes involved in immune cell activation, control of apoptosis (NF-KB appears to shield cells from apoptosis), B and T-cell development, anti-viral and antimicrobial responses, and multiple stress responses.

In non-stimulated conditions, NF-KB is retained in the cytoplasm with I-KB

(Inhibitor KB). However, upon stimulation, I- KB is phosphorylated and degraded, causing NF- KB to shuttle to the nucleus, thereby activating transcription of target genes. Target genes activated by NF- KB include IL-2, IL-6, GM-CSF, ICAM-1 and class 1 MHC.

5 Due to its central role and ability to respond to a range of stimuli, reporter constructs utilizing the NF-KB promoter element are used to screen the fusion protein. Activators or inhibitors of NF-KB would be useful in treating, preventing, and/or diagnosing diseases. For example, inhibitors of NF-KB could be used to treat those diseases related to the acute or chronic activation of NF-KB, such as rheumatoid arthritis.

10 To construct a vector containing the NF-KB promoter element, a PCR based strategy is employed. The upstream primer contains four tandem copies of the NF-KB binding site (GGGGACTTTCCC) (SEQ ID NO: 43), 18 bp of sequence complementary to the 5' end of the SV40 early promoter sequence, and is flanked with an XhoI site:

5':GCGGCCTCGAGGGGACTTTCCCGGGGACTTTCCGGGGACTTTCCGGG  
15 ACTTTCCATCCTGCCATCTCAATTAG:3' (SEQ ID NO: 44)

The downstream primer is complementary to the 3' end of the SV40 promoter and is flanked with a Hind III site:

5':GCGGCAAGCTTTTTGCAAAGCCTAGGC:3' (SEQ ID NO: 39)

PCR amplification is performed using the SV40 promoter template present in the pB-gal:promoter plasmid obtained from Clontech. The resulting PCR fragment is digested with XhoI and Hind III and subcloned into BLSK2-. (Stratagene) Sequencing with the T7 and T3 primers confirms the insert contains the following sequence:

5':CTCGAGGGGACTTTCCCGGGGACTTTCCGGGGACTTTCCGGGACTTT  
CCATCTGCCATCTCAATTAGTCAGCAACCATAGTCCCGCCCCTAACTCCGCCC  
25 ATCCCGCCCCTAACTCCGCCCAGTTCCGCCCATTCTCCGCCCCATGGCTGACTA  
ATTTTTTTTATTTATGCAGAGGCCGAGGCCGCCTCGGCCTCTGAGCTATTCCAG  
AAGTAGTGAGGAGGCTTTTTTGGAGGCCTAGGCTTTTGCAAAAAGCTT:3' (SEQ  
ID NO: 45)

Next, replace the SV40 minimal promoter element present in the pSEAP2-  
30 promoter plasmid (Clontech) with this NF-KB/SV40 fragment using XhoI and HindIII. However, this vector does not contain a neomycin resistance gene, and therefore, is not preferred for mammalian expression systems.

In order to generate stable mammalian cell lines, the NF-KB/SV40/SEAP cassette is removed from the above NF-KB/SEAP vector using restriction enzymes SalI and NotI, and inserted into a vector containing neomycin resistance. Particularly, the NF-KB/SV40/SEAP cassette was inserted into pGFP-1 (Clontech), replacing the GFP gene, after restricting pGFP-1 with SalI and NotI.

Once NF-KB/SV40/SEAP/Neo vector is created, stable Jurkat T-cells are created and maintained according to the protocol described in Example 32. Similarly, the method for assaying fusion proteins with these stable Jurkat T-cells is also described in Example 32. As a positive control, exogenous TNF alpha (0.1, 1, 10 ng) is added to wells H9, H10, and H11, with a 5-10 fold activation typically observed.

### Example 33: Assay Identifying Myeloid Activity

The following protocol is used to assess myeloid activity of an albumin fusion protein of the present invention by determining whether the fusion protein proliferates and/or differentiates myeloid cells. Myeloid cell activity is assessed using the GAS/SEAP/Neo construct produced in Example 29. Thus, factors that increase SEAP activity indicate the ability to activate the Jaks-STATS signal transduction pathway. The myeloid cell used in this assay is U937, a pre-monocyte cell line, although TF-1, HL60, or KG1 can be used.

To transiently transfect U937 cells with the GAS/SEAP/Neo construct produced in Example 29, a DEAE-Dextran method (Kharbanda et. al., 1994, Cell Growth & Differentiation, 5:259-265) is used. First, harvest  $2 \times 10^7$  U937 cells and wash with PBS. The U937 cells are usually grown in RPMI 1640 medium containing 10% heat-inactivated fetal bovine serum (FBS) supplemented with 100 units/ml penicillin and 100 mg/ml streptomycin.

Next, suspend the cells in 1 ml of 20 mM Tris-HCl (pH 7.4) buffer containing 0.5 mg/ml DEAE-Dextran, 8 ug GAS-SEAP2 plasmid DNA, 140 mM NaCl, 5 mM KCl, 375 uM  $\text{Na}_2\text{HPO}_4 \cdot 7\text{H}_2\text{O}$ , 1 mM  $\text{MgCl}_2$ , and 675 uM  $\text{CaCl}_2$ . Incubate at 37 degrees C for 45 min.

Wash the cells with RPMI 1640 medium containing 10% FBS and then resuspend in 10 ml complete medium and incubate at 37 degree C for 36 hr.

The GAS-SEAP/U937 stable cells are obtained by growing the cells in 400 ug/ml

G418. The G418-free medium is used for routine growth but every one to two months, the cells should be re-grown in 400 ug/ml G418 for couple of passages.

These cells are tested by harvesting  $1 \times 10^8$  cells (this is enough for ten 96-well plates assay) and wash with PBS. Suspend the cells in 200 ml above described growth medium, with a final density of  $5 \times 10^5$  cells/ml. Plate 200 ul cells per well in the 96-well plate (or  $1 \times 10^5$  cells/well).

Add different concentrations of the fusion protein. Incubate at 37 degree C for 48 to 72 hr. As a positive control, 100 Unit/ml interferon gamma can be used which is known to activate U937 cells. Over 30 fold induction is typically observed in the positive control wells. SEAP assay the supernatant according to methods known in the art and/or the protocol described in Example 30.

#### **Example 34: Assay Identifying Changes in Small Molecule Concentration and Membrane Permeability**

Binding of a ligand to a receptor is known to alter intracellular levels of small molecules, such as calcium, potassium, sodium, and pH, as well as alter membrane potential. These alterations can be measured in an assay to identify fusion proteins which bind to receptors of a particular cell. Although the following protocol describes an assay for calcium, this protocol can easily be modified to detect changes in potassium, sodium, pH, membrane potential, or any other small molecule which is detectable by a fluorescent probe.

The following assay uses Fluorometric Imaging Plate Reader ("FLIPR") to measure changes in fluorescent molecules (Molecular Probes) that bind small molecules. Clearly, any fluorescent molecule detecting a small molecule can be used instead of the calcium fluorescent molecule, fluo-4 (Molecular Probes, Inc.; catalog no. F-14202), used here.

For adherent cells, seed the cells at 10,000 -20,000 cells/well in a Co-star black 96-well plate with clear bottom. The plate is incubated in a CO<sub>2</sub> incubator for 20 hours. The adherent cells are washed two times in Biotek washer with 200 ul of HBSS (Hank's Balanced Salt Solution) leaving 100 ul of buffer after the final wash.

A stock solution of 1 mg/ml fluo-4 is made in 10% pluronic acid DMSO. To load the cells with fluo-4, 50 ul of 12 ug/ml fluo-4 is added to each well. The plate is incubated



at 37 degrees C in a CO<sub>2</sub> incubator for 60 min. The plate is washed four times in the Biotek washer with HBSS leaving 100 ul of buffer.

For non-adherent cells, the cells are spun down from culture media. Cells are resuspended to  $2.5 \times 10^6$  cells/ml with HBSS in a 50-ml conical tube. 4 ul of 1 mg/ml fluo-4 solution in 10% pluronic acid DMSO is added to each ml of cell suspension. The tube is then placed in a 37 degrees C water bath for 30-60 min. The cells are washed twice with HBSS, resuspended to  $1 \times 10^6$  cells/ml, and dispensed into a microplate, 100 ul/well. The plate is centrifuged at 1000 rpm for 5 min. The plate is then washed once in Denley Cell Wash with 200 ul, followed by an aspiration step to 100 ul final volume.

For a non-cell based assay, each well contains a fluorescent molecule, such as fluo-4. The fusion protein of the invention is added to the well, and a change in fluorescence is detected.

To measure the fluorescence of intracellular calcium, the FLIPR is set for the following parameters: (1) System gain is 300-800 mW; (2) Exposure time is 0.4 second; (3) Camera F/stop is F/2; (4) Excitation is 488 nm; (5) Emission is 530 nm; and (6) Sample addition is 50 ul. Increased emission at 530 nm indicates an extracellular signaling event caused by an albumin fusion protein of the present invention or a molecule induced by an albumin fusion protein of the present invention, which has resulted in an increase in the intracellular  $\text{Ca}^{++}$  concentration.

#### **Example 35: Assay Identifying Tyrosine Kinase Activity**

The Protein Tyrosine Kinases (PTK) represent a diverse group of transmembrane and cytoplasmic kinases. Within the Receptor Protein Tyrosine Kinase (RPTK) group are receptors for a range of mitogenic and metabolic growth factors including the PDGF, FGF, EGF, NGF, HGF and Insulin receptor subfamilies. In addition there are a large family of RPTKs for which the corresponding ligand is unknown. Ligands for RPTKs include mainly secreted small proteins, but also membrane-bound and extracellular matrix proteins.

Activation of RPTK by ligands involves ligand-mediated receptor dimerization, resulting in transphosphorylation of the receptor subunits and activation of the cytoplasmic tyrosine kinases. The cytoplasmic tyrosine kinases include receptor associated tyrosine kinases, of the src-family (e.g., src, yes, lck, lyn, fyn) and non-receptor linked and cytosolic

protein tyrosine kinases, such as the Jak family, members of which mediate signal transduction triggered by the cytokine superfamily of receptors (e.g., the Interleukins, Interferons, GM-CSF, and Leptin).

Because of the wide range of known factors capable of stimulating tyrosine kinase activity, identifying whether an albumin fusion protein of the present invention or a molecule induced by a fusion protein of the present invention is capable of activating tyrosine kinase signal transduction pathways is of interest. Therefore, the following protocol is designed to identify such molecules capable of activating the tyrosine kinase signal transduction pathways.

Seed target cells (e.g., primary keratinocytes) at a density of approximately 25,000 cells per well in a 96 well Loprodyne Silent Screen Plates purchased from Nalge Nunc (Naperville, IL). The plates are sterilized with two 30 minute rinses with 100% ethanol, rinsed with water and dried overnight. Some plates are coated for 2 hr with 100 ml of cell culture grade type I collagen (50 mg/ml), gelatin (2%) or polylysine (50 mg/ml), all of which can be purchased from Sigma Chemicals (St. Louis, MO) or 10% Matrigel purchased from Becton Dickinson (Bedford, MA), or calf serum, rinsed with PBS and stored at 4 degree C. Cell growth on these plates is assayed by seeding 5,000 cells/well in growth medium and indirect quantitation of cell number through use of alamarBlue as described by the manufacturer Alamar Biosciences, Inc. (Sacramento, CA) after 48 hr. Falcon plate covers #3071 from Becton Dickinson (Bedford, MA) are used to cover the Loprodyne Silent Screen Plates. Falcon Microtest III cell culture plates can also be used in some proliferation experiments.

To prepare extracts, A431 cells are seeded onto the nylon membranes of Loprodyne plates (20,000/200ml/well) and cultured overnight in complete medium. Cells are quiesced by incubation in serum-free basal medium for 24 hr. After 5-20 minutes treatment with EGF (60ng/ml) or a different concentrations of an albumin fusion protein of the invention, the medium was removed and 100 ml of extraction buffer ((20 mM HEPES pH 7.5, 0.15 M NaCl, 1% Triton X-100, 0.1% SDS, 2 mM Na<sub>3</sub>VO<sub>4</sub>, 2 mM Na<sub>4</sub>P<sub>2</sub>O<sub>7</sub> and a cocktail of protease inhibitors (# 1836170) obtained from Boehringer Mannheim (Indianapolis, IN)) is added to each well and the plate is shaken on a rotating shaker for 5 minutes at 4°C. The plate is then placed in a vacuum transfer manifold and the extract filtered through the 0.45 mm membrane bottoms of each well using house

vacuum. Extracts are collected in a 96-well catch/assay plate in the bottom of the vacuum manifold and immediately placed on ice. To obtain extracts clarified by centrifugation, the content of each well, after detergent solubilization for 5 minutes, is removed and centrifuged for 15 minutes at 4 degree C at 16,000 x g.

5        Test the filtered extracts for levels of tyrosine kinase activity. Although many methods of detecting tyrosine kinase activity are known, one method is described here.

      Generally, the tyrosine kinase activity of an albumin fusion protein of the invention is evaluated by determining its ability to phosphorylate a tyrosine residue on a specific substrate (a biotinylated peptide). Biotinylated peptides that can be used for this purpose  
10       include PSK1 (corresponding to amino acids 6-20 of the cell division kinase cdc2-p34) and PSK2 (corresponding to amino acids 1-17 of gastrin). Both peptides are substrates for a range of tyrosine kinases and are available from Boehringer Mannheim.

      The tyrosine kinase reaction is set up by adding the following components in order. First, add 10ul of 5uM Biotinylated Peptide, then 10ul ATP/Mg<sub>2</sub><sup>+</sup> (5mM ATP/50mM  
15       MgCl<sub>2</sub>), then 10ul of 5x Assay Buffer (40mM imidazole hydrochloride, pH7.3, 40 mM beta-glycerophosphate, 1mM EGTA, 100mM MgCl<sub>2</sub>, 5 mM MnCl<sub>2</sub>, 0.5 mg/ml BSA), then 5ul of Sodium Vanadate(1mM), and then 5ul of water. Mix the components gently and preincubate the reaction mix at 30 degree C for 2 min. Initiate the reaction by adding 10ul of the control enzyme or the filtered supernatant.

20       The tyrosine kinase assay reaction is then terminated by adding 10 ul of 120mM EDTA and place the reactions on ice.

      Tyrosine kinase activity is determined by transferring 50 ul aliquot of reaction mixture to a microtiter plate (MTP) module and incubating at 37 degree C for 20 min. This allows the streptavidin coated 96 well plate to associate with the biotinylated peptide.  
25       Wash the MTP module with 300ul/well of PBS four times. Next add 75 ul of anti-phosphotyrosine antibody conjugated to horse radish peroxidase(anti-P-Tyr-POD(0.5u/ml)) to each well and incubate at 37 degree C for one hour. Wash the well as above.

      Next add 100ul of peroxidase substrate solution (Boehringer Mannheim) and incubate at room temperature for at least 5 mins (up to 30 min). Measure the absorbance  
30       of the sample at 405 nm by using ELISA reader. The level of bound peroxidase activity is quantitated using an ELISA reader and reflects the level of tyrosine kinase activity.

**Example 36: Assay Identifying Phosphorylation Activity**

As a potential alternative and/or complement to the assay of protein tyrosine kinase activity described in Example 35, an assay which detects activation (phosphorylation) of major intracellular signal transduction intermediates can also be used. For example, as described below one particular assay can detect tyrosine phosphorylation of the Erk-1 and Erk-2 kinases. However, phosphorylation of other molecules, such as Raf, JNK, p38 MAP, Map kinase kinase (MEK), MEK kinase, Src, Muscle specific kinase (MuSK), IRAK, Tec, and Janus, as well as any other phosphoserine, phosphotyrosine, or phosphothreonine molecule, can be detected by substituting these molecules for Erk-1 or Erk-2 in the following assay.

Specifically, assay plates are made by coating the wells of a 96-well ELISA plate with 0.1ml of protein G (1ug/ml) for 2 hr at room temp, (RT). The plates are then rinsed with PBS and blocked with 3% BSA/PBS for 1 hr at RT. The protein G plates are then treated with 2 commercial monoclonal antibodies (100ng/well) against Erk-1 and Erk-2 (1 hr at RT) (Santa Cruz Biotechnology). (To detect other molecules, this step can easily be modified by substituting a monoclonal antibody detecting any of the above described molecules.) After 3-5 rinses with PBS, the plates are stored at 4 degree C until use.

A431 cells are seeded at 20,000/well in a 96-well Loprodyne filterplate and cultured overnight in growth medium. The cells are then starved for 48 hr in basal medium (DMEM) and then treated with EGF (6ng/well) or varying concentrations of the fusion protein of the invention for 5-20 minutes. The cells are then solubilized and extracts filtered directly into the assay plate.

After incubation with the extract for 1 hr at RT, the wells are again rinsed. As a positive control, a commercial preparation of MAP kinase (10ng/well) is used in place of A431 extract. Plates are then treated with a commercial polyclonal (rabbit) antibody (1ug/ml) which specifically recognizes the phosphorylated epitope of the Erk-1 and Erk-2 kinases (1 hr at RT). This antibody is biotinylated by standard procedures. The bound polyclonal antibody is then quantitated by successive incubations with Europium-streptavidin and Europium fluorescence enhancing reagent in the Wallac DELFIA instrument (time-resolved fluorescence). An increased fluorescent signal over background indicates a phosphorylation by the fusion protein of the present invention or a molecule induced by an albumin fusion protein of the present invention.

**Example 37: Assay for the Stimulation of Bone Marrow CD34+ Cell Proliferation**

This assay is based on the ability of human CD34+ to proliferate in the presence of hematopoietic growth factors and evaluates the ability of fusion proteins of the invention to stimulate proliferation of CD34+ cells.

It has been previously shown that most mature precursors will respond to only a single signal. More immature precursors require at least two signals to respond. Therefore, to test the effect of fusion proteins of the invention on hematopoietic activity of a wide range of progenitor cells, the assay contains a given fusion protein of the invention in the presence or absence of hematopoietic growth factors. Isolated cells are cultured for 5 days in the presence of Stem Cell Factor (SCF) in combination with tested sample. SCF alone has a very limited effect on the proliferation of bone marrow (BM) cells, acting in such conditions only as a "survival" factor. However, combined with any factor exhibiting stimulatory effect on these cells (e.g., IL-3), SCF will cause a synergistic effect. Therefore, if the tested fusion protein has a stimulatory effect on hematopoietic progenitors, such activity can be easily detected. Since normal BM cells have a low level of cycling cells, it is likely that any inhibitory effect of a given fusion protein might not be detected. Accordingly, assays for an inhibitory effect on progenitors is preferably tested in cells that are first subjected to *in vitro* stimulation with SCF+IL-3, and then contacted with the compound that is being evaluated for inhibition of such induced proliferation.

Briefly, CD34+ cells are isolated using methods known in the art. The cells are thawed and resuspended in medium (QBSF 60 serum-free medium with 1% L-glutamine (500ml) Quality Biological, Inc., Gaithersburg, MD Cat# 160-204-101). After several gentle centrifugation steps at 200 x g, cells are allowed to rest for one hour. The cell count is adjusted to  $2.5 \times 10^5$  cells/ml. During this time, 100  $\mu$ l of sterile water is added to the peripheral wells of a 96-well plate. The cytokines that can be tested with an albumin fusion protein of the invention in this assay is rhSCF (R&D Systems, Minneapolis, MN, Cat# 255-SC) at 50 ng/ml alone and in combination with rhSCF and rhIL-3 (R&D Systems, Minneapolis, MN, Cat# 203-ML) at 30 ng/ml. After one hour, 10  $\mu$ l of prepared cytokines, varying concentrations of an albumin fusion protein of the invention, and 20  $\mu$ l of diluted cells are added to the media which is already present in the wells to allow for a

final total volume of 100  $\mu$ l. The plates are then placed in a 37°C/5% CO<sub>2</sub> incubator for five days.

5 Eighteen hours before the assay is harvested, 0.5  $\mu$ Ci/well of [3H] Thymidine is added in a 10  $\mu$ l volume to each well to determine the proliferation rate. The experiment is terminated by harvesting the cells from each 96-well plate to a filtermat using the Tomtec Harvester 96. After harvesting, the filtermats are dried, trimmed and placed into OmniFilter assemblies consisting of one OmniFilter plate and one OmniFilter Tray. 60  $\mu$ l Microscint is added to each well and the plate sealed with TopSeal-A press-on sealing film. A bar code 15 sticker is affixed to the first plate for counting. The sealed plates are then loaded and the level of radioactivity determined via the Packard Top Count and the printed data collected for analysis. The level of radioactivity reflects the amount of cell proliferation.

The studies described in this example test the activity of a given fusion protein to stimulate bone marrow CD34+ cell proliferation. One skilled in the art could easily modify the exemplified studies to test the activity of fusion proteins and polynucleotides of the invention (e.g., gene therapy) as well as agonists and antagonists thereof. The ability of an albumin fusion protein of the invention to stimulate the proliferation of bone marrow CD34+ cells indicates that the albumin fusion protein and/or polynucleotides corresponding to the fusion protein are useful for the diagnosis and treatment of disorders affecting the immune system and hematopoiesis. Representative uses are described in the "Immune Activity" and "Infectious Disease" sections above, and elsewhere herein.

***Example 38: Assay for Extracellular Matrix Enhanced Cell Response (EMECCR)***

25 The objective of the Extracellular Matrix Enhanced Cell Response (EMECCR) assay is to evaluate the ability of fusion proteins of the invention to act on hematopoietic stem cells in the context of the extracellular matrix (ECM) induced signal.

Cells respond to the regulatory factors in the context of signal(s) received from the surrounding microenvironment. For example, fibroblasts, and endothelial and epithelial stem cells fail to replicate in the absence of signals from the ECM. Hematopoietic stem cells can undergo self-renewal in the bone marrow, but not in *in vitro* suspension culture. The ability of stem cells to undergo self-renewal *in vitro* is dependent upon their interaction with the stromal cells and the ECM protein fibronectin (fn). Adhesion of cells

to fn is mediated by the  $\alpha_5\beta_1$  and  $\alpha_4\beta_1$  integrin receptors, which are expressed by human and mouse hematopoietic stem cells. The factor(s) which integrate with the ECM environment and are responsible for stimulating stem cell self-renewal have not yet been identified. Discovery of such factors should be of great interest in gene therapy and bone marrow transplant applications

Briefly, polystyrene, non tissue culture treated, 96-well plates are coated with fn fragment at a coating concentration of  $0.2 \mu\text{g}/\text{cm}^2$ . Mouse bone marrow cells are plated (1,000 cells/well) in 0.2 ml of serum-free medium. Cells cultured in the presence of IL-3 (5 ng/ml) + SCF (50 ng/ml) would serve as the positive control, conditions under which little self-renewal but pronounced differentiation of the stem cells is to be expected. Albumin fusion proteins of the invention are tested with appropriate negative controls in the presence and absence of SCF (5.0 ng/ml), where volume of the administered composition containing the albumin fusion protein of the invention represents 10% of the total assay volume. The plated cells are then allowed to grow by incubating in a low oxygen environment (5%  $\text{CO}_2$ , 7%  $\text{O}_2$ , and 88%  $\text{N}_2$ ) tissue culture incubator for 7 days. The number of proliferating cells within the wells is then quantitated by measuring thymidine incorporation into cellular DNA. Verification of the positive hits in the assay will require phenotypic characterization of the cells, which can be accomplished by scaling up of the culture system and using appropriate antibody reagents against cell surface antigens and FACScan.

One skilled in the art could easily modify the exemplified studies to test the activity of albumin fusion proteins and polynucleotides of the invention (e.g., gene therapy).

If a particular fusion protein of the present invention is found to be a stimulator of hematopoietic progenitors, the fusion protein and polynucleotides corresponding to the fusion protein may be useful for example, in the diagnosis and treatment of disorders affecting the immune system and hematopoiesis. Representative uses are described in the "Immune Activity" and "Infectious Disease" sections above, and elsewhere herein. The fusion protein may also be useful in the expansion of stem cells and committed progenitors of various blood lineages, and in the differentiation and/or proliferation of various cell types.

Additionally, the albumin fusion proteins of the invention and polynucleotides encoding albumin fusion proteins of the invention, may also be employed to inhibit the proliferation and differentiation of hematopoietic cells and therefore may be employed to protect bone marrow stem cells from chemotherapeutic agents during chemotherapy. This antiproliferative effect may allow administration of higher doses of chemotherapeutic agents and, therefore, more effective chemotherapeutic treatment.

Moreover, fusion proteins of the invention and polynucleotides encoding albumin fusion proteins of the invention may also be useful for the treatment and diagnosis of hematopoietic related disorders such as, anemia, pancytopenia, leukopenia, thrombocytopenia or leukemia, since stromal cells are important in the production of cells of hematopoietic lineages. The uses include bone marrow cell ex-vivo culture, bone marrow transplantation, bone marrow reconstitution, radiotherapy or chemotherapy of neoplasia.

#### **Example 39: Human Dermal Fibroblast and Aortic Smooth Muscle Cell Proliferation**

An albumin fusion protein of the invention is added to cultures of normal human dermal fibroblasts (NHDF) and human aortic smooth muscle cells (AoSMC) and two co-assays are performed with each sample. The first assay examines the effect of the fusion protein on the proliferation of normal human dermal fibroblasts (NHDF) or aortic smooth muscle cells (AoSMC). Aberrant growth of fibroblasts or smooth muscle cells is a part of several pathological processes, including fibrosis, and restenosis. The second assay examines IL6 production by both NHDF and SMC. IL6 production is an indication of functional activation. Activated cells will have increased production of a number of cytokines and other factors, which can result in a proinflammatory or immunomodulatory outcome. Assays are run with and without co-TNF $\alpha$  stimulation, in order to check for costimulatory or inhibitory activity.

Briefly, on day 1, 96-well black plates are set up with 1000 cells/well (NHDF) or 2000 cells/well (AoSMC) in 100  $\mu$ l culture media. NHDF culture media contains: Clonetics FB basal media, 1mg/ml hFGF, 5mg/ml insulin, 50mg/ml gentamycin, 2%FBS, while AoSMC culture media contains Clonetics SM basal media, 0.5  $\mu$ g/ml hEGF, 5mg/ml insulin, 1 $\mu$ g/ml hFGF, 50mg/ml gentamycin, 50  $\mu$ g/ml Amphotericin B, 5%FBS.



After incubation at 37°C for at least 4-5 hours culture media is aspirated and replaced with growth arrest media. Growth arrest media for NHDF contains fibroblast basal media, 50mg/ml gentamycin, 2% FBS, while growth arrest media for AoSMC contains SM basal media, 50mg/ml gentamycin, 50µg/ml Amphotericin B, 0.4% FBS. Incubate at 37 °C until day 2.

On day 2, serial dilutions and templates of an albumin fusion protein of the invention are designed such that they always include media controls and known-protein controls. For both stimulation and inhibition experiments, proteins are diluted in growth arrest media. For inhibition experiments, TNFa is added to a final concentration of 2ng/ml (NHDF) or 5ng/ml (AoSMC). Add 1/3 vol media containing controls or an albumin fusion protein of the invention and incubate at 37 degrees C/5% CO<sub>2</sub> until day 5.

Transfer 60µl from each well to another labeled 96-well plate, cover with a plate-sealer, and store at 4 degrees C until Day 6 (for IL6 ELISA). To the remaining 100 µl in the cell culture plate, aseptically add Alamar Blue in an amount equal to 10% of the culture volume (10µl). Return plates to incubator for 3 to 4 hours. Then measure fluorescence with excitation at 530nm and emission at 590nm using the CytoFluor. This yields the growth stimulation/inhibition data.

On day 5, the IL6 ELISA is performed by coating a 96 well plate with 50-100 µl/well of Anti-Human IL6 Monoclonal antibody diluted in PBS, pH 7.4, incubate ON at room temperature.

On day 6, empty the plates into the sink and blot on paper towels. Prepare Assay Buffer containing PBS with 4% BSA. Block the plates with 200 µl/well of Pierce Super Block blocking buffer in PBS for 1-2 hr and then wash plates with wash buffer (PBS, 0.05% Tween-20). Blot plates on paper towels. Then add 50 µl/well of diluted Anti-Human IL-6 Monoclonal, Biotin-labeled antibody at 0.50 mg/ml. Make dilutions of IL-6 stock in media (30, 10, 3, 1, 0.3, 0 ng/ml). Add duplicate samples to top row of plate. Cover the plates and incubate for 2 hours at RT on shaker.

Plates are washed with wash buffer and blotted on paper towels. Dilute EU-labeled Streptavidin 1:1000 in Assay buffer, and add 100 µl/well. Cover the plate and incubate 1 h at RT. Plates are again washed with wash buffer and blotted on paper towels.

Add 100 µl/well of Enhancement Solution. Shake for 5 minutes. Read the plate on the Wallac DELFIA Fluorometer. Readings from triplicate samples in each assay were

tabulated and averaged.

A positive result in this assay suggests AoSMC cell proliferation and that the albumin fusion protein may be involved in dermal fibroblast proliferation and/or smooth muscle cell proliferation. A positive result also suggests many potential uses of the fusion protein and polynucleotides encoding the albumin fusion protein. For example, inflammation and immune responses, wound healing, and angiogenesis, as detailed throughout this specification. Particularly, fusion proteins may be used in wound healing and dermal regeneration, as well as the promotion of vasculogenesis, both of the blood vessels and lymphatics. The growth of vessels can be used in the treatment of, for example, cardiovascular diseases. Additionally, fusion proteins showing antagonistic activity in this assay may be useful in treating diseases, disorders, and/or conditions which involve angiogenesis by acting as an anti-vascular agent (e.g., anti-angiogenesis). These diseases, disorders, and/or conditions are known in the art and/or are described herein, such as, for example, malignancies, solid tumors, benign tumors, for example hemangiomas, acoustic neuromas, neurofibromas, trachomas, and pyogenic granulomas; arteriosclerotic plaques; ocular angiogenic diseases, for example, diabetic retinopathy, retinopathy of prematurity, macular degeneration, corneal graft rejection, neovascular glaucoma, retrolental fibroplasia, rubeosis, retinoblastoma, uveitis and Pterygia (abnormal blood vessel growth) of the eye; rheumatoid arthritis; psoriasis; delayed wound healing; endometriosis; vasculogenesis; granulations; hypertrophic scars (keloids); nonunion fractures; scleroderma; trachoma; vascular adhesions; myocardial angiogenesis; coronary collaterals; cerebral collaterals; arteriovenous malformations; ischemic limb angiogenesis; Osler-Webber Syndrome; plaque neovascularization; telangiectasia; hemophiliac joints; angiofibroma; fibromuscular dysplasia; wound granulation; Crohn's disease; and atherosclerosis. Moreover, albumin fusion proteins that act as antagonists in this assay may be useful in treating anti-hyperproliferative diseases and/or anti-inflammatory known in the art and/or described herein.

#### *Example 40: Cellular Adhesion Molecule (CAM) Expression on Endothelial Cells*

The recruitment of lymphocytes to areas of inflammation and angiogenesis involves specific receptor-ligand interactions between cell surface adhesion molecules

(CAMs) on lymphocytes and the vascular endothelium. The adhesion process, in both normal and pathological settings, follows a multi-step cascade that involves intercellular adhesion molecule-1 (ICAM-1), vascular cell adhesion molecule-1 (VCAM-1), and endothelial leukocyte adhesion molecule-1 (E-selectin) expression on endothelial cells (EC). The expression of these molecules and others on the vascular endothelium determines the efficiency with which leukocytes may adhere to the local vasculature and extravasate into the local tissue during the development of an inflammatory response. The local concentration of cytokines and growth factor participate in the modulation of the expression of these CAMs.

Briefly, endothelial cells (e.g., Human Umbilical Vein Endothelial cells (HUVECs)) are grown in a standard 96 well plate to confluence, growth medium is removed from the cells and replaced with 100  $\mu$ l of 199 Medium (10% fetal bovine serum (FBS)). Samples for testing (containing an albumin fusion protein of the invention) and positive or negative controls are added to the plate in triplicate (in 10  $\mu$ l volumes). Plates are then incubated at 37°C for either 5 h (selectin and integrin expression) or 24 h (integrin expression only). Plates are aspirated to remove medium and 100  $\mu$ l of 0.1% paraformaldehyde-PBS(with Ca<sup>++</sup> and Mg<sup>++</sup>) is added to each well. Plates are held at 4°C for 30 min. Fixative is removed from the wells and wells are washed 1X with PBS(+Ca,Mg) + 0.5% BSA and drained. 10  $\mu$ l of diluted primary antibody is added to the test and control wells. Anti-ICAM-1-Biotin, Anti-VCAM-1-Biotin and Anti-E-selectin-Biotin are used at a concentration of 10  $\mu$ g/ml (1:10 dilution of 0.1 mg/ml stock antibody). Cells are incubated at 37°C for 30 min. in a humidified environment. Wells are washed three times with PBS(+Ca,Mg) + 0.5% BSA. 20  $\mu$ l of diluted ExtrAvidin-Alkaline Phosphatase (1:5,000 dilution, referred to herein as the working dilution) are added to each well and incubated at 37°C for 30 min. Wells are washed three times with PBS(+Ca,Mg)+0.5% BSA. Dissolve 1 tablet of p-Nitrophenol Phosphate pNPP per 5 ml of glycine buffer (pH 10.4). 100  $\mu$ l of pNPP substrate in glycine buffer is added to each test well. Standard wells in triplicate are prepared from the working dilution of the ExtrAvidin-Alkaline Phosphatase in glycine buffer: 1:5,000 ( $10^0$ ) >  $10^{-0.5}$  >  $10^{-1}$  >  $10^{-1.5}$ . 50  $\mu$ l of each dilution is added to triplicate wells and the resulting AP content in each well is 5.50 ng, 1.74 ng, 0.55 ng, 0.18 ng. 100  $\mu$ l of pNPP reagent is then added to each of the standard wells. The plate is incubated at 37°C for 4h. A volume of 50  $\mu$ l of 3M NaOH is

added to all wells. The plate is read on a plate reader at 405 nm using the background subtraction option on blank wells filled with glycine buffer only. Additionally, the template is set up to indicate the concentration of AP-conjugate in each standard well [ 5.50 ng; 1.74 ng; 0.55 ng; 0.18 ng]. Results are indicated as amount of bound AP-conjugate in each sample.

***Example 41: Alamar Blue Endothelial Cells Proliferation Assay***

This assay may be used to quantitatively determine protein mediated inhibition of bFGF-induced proliferation of Bovine Lymphatic Endothelial Cells (LECs), Bovine Aortic Endothelial Cells (BAECs) or Human Microvascular Uterine Myometrial Cells (UTMECs). This assay incorporates a fluorometric growth indicator based on detection of metabolic activity. A standard Alamar Blue Proliferation Assay is prepared in EGM-2MV with 10 ng/ml of bFGF added as a source of endothelial cell stimulation. This assay may be used with a variety of endothelial cells with slight changes in growth medium and cell concentration. Dilutions of protein batches to be tested are diluted as appropriate. Serum-free medium (GIBCO SFM) without bFGF is used as a non-stimulated control and Angiostatin or TSP-1 are included as a known inhibitory controls.

Briefly, LEC, BAECs or UTMECs are seeded in growth media at a density of 5000 to 2000 cells/well in a 96 well plate and placed at 37 degreesC overnight. After the overnight incubation of the cells, the growth media is removed and replaced with GIBCO EC-SFM. The cells are treated with the appropriate dilutions of an albumin fusion protein of the invention or control protein sample(s) (prepared in SFM ) in triplicate wells with additional bFGF to a concentration of 10 ng/ml. Once the cells have been treated with the samples, the plate(s) is/are placed back in the 37° C incubator for three days. After three days 10 ml of stock alamar blue (Biosource Cat# DAL1100) is added to each well and the plate(s) is/are placed back in the 37°C incubator for four hours. The plate(s) are then read at 530nm excitation and 590nm emission using the CytoFluor fluorescence reader. Direct output is recorded in relative fluorescence units.

Alamar blue is an oxidation-reduction indicator that both fluoresces and changes color in response to chemical reduction of growth medium resulting from cell growth. As cells grow in culture, innate metabolic activity results in a chemical reduction of the immediate surrounding environment. Reduction related to growth causes the indicator to

change from oxidized (non-fluorescent blue) form to reduced (fluorescent red) form (i.e., stimulated proliferation will produce a stronger signal and inhibited proliferation will produce a weaker signal and the total signal is proportional to the total number of cells as well as their metabolic activity). The background level of activity is observed with the starvation medium alone. This is compared to the output observed from the positive control samples (bFGF in growth medium) and protein dilutions.

***Example 42: Detection of Inhibition of a Mixed Lymphocyte Reaction***

This assay can be used to detect and evaluate inhibition of a Mixed Lymphocyte Reaction (MLR) by fusion proteins of the invention. Inhibition of a MLR may be due to a direct effect on cell proliferation and viability, modulation of costimulatory molecules on interacting cells, modulation of adhesiveness between lymphocytes and accessory cells, or modulation of cytokine production by accessory cells. Multiple cells may be targeted by the albumin fusion proteins that inhibit MLR since the peripheral blood mononuclear fraction used in this assay includes T, B and natural killer lymphocytes, as well as monocytes and dendritic cells.

Albumin fusion proteins of the invention found to inhibit the MLR may find application in diseases associated with lymphocyte and monocyte activation or proliferation. These include, but are not limited to, diseases such as asthma, arthritis, diabetes, inflammatory skin conditions, psoriasis, eczema, systemic lupus erythematosus, multiple sclerosis, glomerulonephritis, inflammatory bowel disease, crohn's disease, ulcerative colitis, arteriosclerosis, cirrhosis, graft vs. host disease, host vs. graft disease, hepatitis, leukemia and lymphoma.

Briefly, PBMCs from human donors are purified by density gradient centrifugation using Lymphocyte Separation Medium (LSM<sup>®</sup>, density 1.0770 g/ml, Organon Teknika Corporation, West Chester, PA). PBMCs from two donors are adjusted to  $2 \times 10^6$  cells/ml in RPMI-1640 (Life Technologies, Grand Island, NY) supplemented with 10% FCS and 2 mM glutamine. PBMCs from a third donor is adjusted to  $2 \times 10^5$  cells/ml. Fifty microliters of PBMCs from each donor is added to wells of a 96-well round bottom microtiter plate. Dilutions of the fusion protein test material (50  $\mu$ l) is added in triplicate to microtiter wells. Test samples (of the protein of interest) are added for final dilution of 1:4; rhuIL-2 (R&D Systems, Minneapolis, MN, catalog number 202-IL) is added to a final

concentration of 1 µg/ml; anti-CD4 mAb (R&D Systems, clone 34930.11, catalog number MAB379) is added to a final concentration of 10 µg/ml. Cells are cultured for 7-8 days at 37°C in 5% CO<sub>2</sub>, and 1 µCi of [<sup>3</sup>H] thymidine is added to wells for the last 16 hrs of culture. Cells are harvested and thymidine incorporation determined using a Packard  
5 TopCount. Data is expressed as the mean and standard deviation of triplicate determinations.

Samples of the fusion protein of interest are screened in separate experiments and compared to the negative control treatment, anti-CD4 mAb, which inhibits proliferation of lymphocytes and the positive control treatment, IL-2 (either as recombinant material or  
10 supernatant), which enhances proliferation of lymphocytes.

#### *Example 43: Assays for Protease Activity*

The following assay may be used to assess protease activity of an albumin fusion protein of the invention.

15 Gelatin and casein zymography are performed essentially as described (Heusen et al., *Anal. Biochem.*, 102:196-202 (1980); Wilson et al., *Journal of Urology*, 149:653-658 (1993)). Samples are run on 10% polyacrylamide/0.1% SDS gels containing 1% gelatin or casein, soaked in 2.5% triton at room temperature for 1 hour, and in 0.1M glycine, pH 8.3 at 37°C 5 to 16 hours. After staining in amido black areas of proteolysis appear as clear  
20 areas against the blue-black background. Trypsin (Sigma T8642) is used as a positive control.

Protease activity is also determined by monitoring the cleavage of n-a-benzoyl-L-arginine ethyl ester (BAEE) (Sigma B-4500. Reactions are set up in (25mM NaPO<sub>4</sub>, 1mM EDTA, and 1mM BAEE), pH 7.5. Samples are added and the change in adsorbance at  
25 260nm is monitored on the Beckman DU-6 spectrophotometer in the time-drive mode. Trypsin is used as a positive control.

Additional assays based upon the release of acid-soluble peptides from casein or hemoglobin measured as adsorbance at 280 nm or colorimetrically using the Folin method are performed as described in Bergmeyer, et al., *Methods of Enzymatic Analysis*, 5 (1984).  
30 Other assays involve the solubilization of chromogenic substrates (Ward, *Applied Science*, 251-317 (1983)).

***Example 44: Identifying Serine Protease Substrate Specificity***

Methods known in the art or described herein may be used to determine the substrate specificity of the albumin fusion proteins of the present invention having serine protease activity. A preferred method of determining substrate specificity is by the use of positional scanning synthetic combinatorial libraries as described in GB 2 324 529 (incorporated herein in its entirety).

***Example 45: Ligand Binding Assays***

The following assay may be used to assess ligand binding activity of an albumin fusion protein of the invention.

Ligand binding assays provide a direct method for ascertaining receptor pharmacology and are adaptable to a high throughput format. The purified ligand for an albumin fusion protein of the invention is radiolabeled to high specific activity (50-2000 Ci/mmol) for binding studies. A determination is then made that the process of radiolabeling does not diminish the activity of the ligand towards the fusion protein. Assay conditions for buffers, ions, pH and other modulators such as nucleotides are optimized to establish a workable signal to noise ratio for both membrane and whole cell polypeptide sources. For these assays, specific polypeptide binding is defined as total associated radioactivity minus the radioactivity measured in the presence of an excess of unlabeled competing ligand. Where possible, more than one competing ligand is used to define residual nonspecific binding.

***Example 46: Functional Assay in *Xenopus* Oocytes***

Capped RNA transcripts from linearized plasmid templates encoding an albumin fusion protein of the invention is synthesized in vitro with RNA polymerases in accordance with standard procedures. In vitro transcripts are suspended in water at a final concentration of 0.2 mg/ml. Ovarian lobes are removed from adult female toads, Stage V defolliculated oocytes are obtained, and RNA transcripts (10 ng/oocyte) are injected in a 50 nl bolus using a microinjection apparatus. Two electrode voltage clamps are used to measure the currents from individual *Xenopus oocytes* in response fusion protein and polypeptide agonist exposure. Recordings are made in Ca<sup>2+</sup> free Barth's medium at room

temperature. The *Xenopus* system can be used to screen known ligands and tissue/cell extracts for activating ligands.

***Example 47: Microphysiometric Assays***

5       Activation of a wide variety of secondary messenger systems results in extrusion of small amounts of acid from a cell. The acid formed is largely as a result of the increased metabolic activity required to fuel the intracellular signaling process. The pH changes in the media surrounding the cell are very small but are detectable by the CYTOSENSOR microphysiometer (Molecular Devices Ltd., Menlo Park, Calif.). The CYTOSENSOR is  
10       thus capable of detecting the ability of an albumin fusion protein of the invention to activate secondary messengers that are coupled to an energy utilizing intracellular signaling pathway.

***Example 48: Extract/Cell Supernatant Screening***

15       A large number of mammalian receptors exist for which there remains, as yet, no cognate activating ligand (agonist). Thus, active ligands for these receptors may not be included within the ligands banks as identified to date. Accordingly, the albumin fusion proteins of the invention can also be functionally screened (using calcium, cAMP, microphysiometer, oocyte electrophysiology, etc., functional screens) against tissue  
20       extracts to identify natural ligands for the Therapeutic protein portion and/or albumin protein portion of an albumin fusion protein of the invention. Extracts that produce positive functional responses can be sequentially subfractionated until an activating ligand is isolated and identified.

25       ***Example 49: ATP-binding assay***

      The following assay may be used to assess ATP-binding activity of fusion proteins of the invention.

      ATP-binding activity of an albumin fusion protein of the invention may be detected using the ATP-binding assay described in U.S. Patent 5,858,719, which is herein  
30       incorporated by reference in its entirety. Briefly, ATP-binding to an albumin fusion protein of the invention is measured via photoaffinity labeling with 8-azido-ATP in a competition assay. Reaction mixtures containing 1 mg/ml of ABC transport protein are incubated with



varying concentrations of ATP, or the non-hydrolyzable ATP analog adenylyl-5'-imidodiphosphate for 10 minutes at 4°C. A mixture of 8-azido-ATP (Sigma Chem. Corp., St. Louis, MO.) plus 8-azido-ATP ( $^{32}\text{P}$ -ATP) (5 mCi/ $\mu\text{mol}$ , ICN, Irvine CA.) is added to a final concentration of 100  $\mu\text{M}$  and 0.5 ml aliquots are placed in the wells of a porcelain spot plate on ice. The plate is irradiated using a short wave 254 nm UV lamp at a distance of 2.5 cm from the plate for two one-minute intervals with a one-minute cooling interval in between. The reaction is stopped by addition of dithiothreitol to a final concentration of 2mM. The incubations are subjected to SDS-PAGE electrophoresis, dried, and autoradiographed. Protein bands corresponding to the albumin fusion proteins of the invention are excised, and the radioactivity quantified. A decrease in radioactivity with increasing ATP or adenylyl-5'-imidodiphosphate provides a measure of ATP affinity to the fusion protein.

***Example 50: Phosphorylation Assay***

In order to assay for phosphorylation activity of an albumin fusion protein of the invention, a phosphorylation assay as described in U.S. Patent 5,958,405 (which is herein incorporated by reference) is utilized. Briefly, phosphorylation activity may be measured by phosphorylation of a protein substrate using gamma-labeled  $^{32}\text{P}$ -ATP and quantitation of the incorporated radioactivity using a gamma radioisotope counter. The fusion protein of the invention is incubated with the protein substrate,  $^{32}\text{P}$ -ATP, and a kinase buffer. The  $^{32}\text{P}$  incorporated into the substrate is then separated from free  $^{32}\text{P}$ -ATP by electrophoresis, and the incorporated  $^{32}\text{P}$  is counted and compared to a negative control. Radioactivity counts above the negative control are indicative of phosphorylation activity of the fusion protein.

***Example 51: Detection of Phosphorylation Activity (Activation) of an Albumin Fusion Protein of the Invention in the Presence of Polypeptide Ligands***

Methods known in the art or described herein may be used to determine the phosphorylation activity of an albumin fusion protein of the invention. A preferred method of determining phosphorylation activity is by the use of the tyrosine phosphorylation assay as described in US 5,817,471 (incorporated herein by reference).

***Example 52: Identification Of Signal Transduction Proteins That Interact With An albumin fusion protein Of The Present Invention***

Albumin fusion proteins of the invention may serve as research tools for the identification, characterization and purification of signal transduction pathway proteins or  
5 receptor proteins. Briefly, a labeled fusion protein of the invention is useful as a reagent for the purification of molecules with which it interacts. In one embodiment of affinity purification, an albumin fusion protein of the invention is covalently coupled to a chromatography column. Cell-free extract derived from putative target cells, such as carcinoma tissues, is passed over the column, and molecules with appropriate affinity bind  
10 to the albumin fusion protein. The protein complex is recovered from the column, dissociated, and the recovered molecule subjected to N-terminal protein sequencing. This amino acid sequence is then used to identify the captured molecule or to design degenerate oligonucleotide probes for cloning the relevant gene from an appropriate cDNA library.

***Example 53: IL-6 Bioassay***

A variety of assays are known in the art for testing the proliferative effects of an albumin fusion protein of the invention. For example, one such assay is the IL-6 Bioassay as described by Marz *et al.* (*Proc. Natl. Acad. Sci., U.S.A.*, 95:3251-56 (1998), which is herein incorporated by reference). After 68 hrs. at 37°C, the number of viable  
20 cells is measured by adding the tetrazolium salt thiazolyl blue (MTT) and incubating for a further 4 hrs. at 37°C. B9 cells are lysed by SDS and optical density is measured at 570 nm. Controls containing IL-6 (positive) and no cytokine (negative) are Briefly, IL-6 dependent B9 murine cells are washed three times in IL-6 free medium and plated at a concentration of 5,000 cells per well in 50 µl, and 50 µl of fusion protein of the invention  
25 is added. Enhanced proliferation in the test sample(s) (containing an albumin fusion protein of the invention) relative to the negative control is indicative of proliferative effects mediated by the fusion protein.

***Example 54: Support of Chicken Embryo Neuron Survival***

30 To test whether sympathetic neuronal cell viability is supported by an albumin fusion protein of the invention, the chicken embryo neuronal survival assay of Senaldi *et al* may be utilized (*Proc. Natl. Acad. Sci., U.S.A.*, 96:11458-63 (1998), which is herein

incorporated by reference). Briefly, motor and sympathetic neurons are isolated from chicken embryos, resuspended in L15 medium (with 10% FCS, glucose, sodium selenite, progesterone, conalbumin, putrescine, and insulin; Life Technologies, Rockville, MD.) and Dulbecco's modified Eagles medium [with 10% FCS, glutamine, penicillin, and 25 mM Hepes buffer (pH 7.2); Life Technologies, Rockville, MD.], respectively, and incubated at 37°C in 5% CO<sub>2</sub> in the presence of different concentrations of the purified fusion protein of the invention, as well as a negative control lacking any cytokine. After 3 days, neuron survival is determined by evaluation of cellular morphology, and through the use of the colorimetric assay of Mosmann (Mosmann, T., *J. Immunol. Methods*, 65:55-63 (1983)). Enhanced neuronal cell viability as compared to the controls lacking cytokine is indicative of the ability of the albumin fusion protein to enhance the survival of neuronal cells.

***Example 55: Assay for Phosphatase Activity***

The following assay may be used to assess serine/threonine phosphatase (PTPase) activity of an albumin fusion protein of the invention.

In order to assay for serine/threonine phosphatase (PTPase) activity, assays can be utilized which are widely known to those skilled in the art. For example, the serine/threonine phosphatase (PSPase) activity of an albumin fusion protein of the invention may be measured using a PSPase assay kit from New England Biolabs, Inc. Myelin basic protein (MyBP), a substrate for PSPase, is phosphorylated on serine and threonine residues with cAMP-dependent Protein Kinase in the presence of [<sup>32</sup>P]ATP. Protein serine/threonine phosphatase activity is then determined by measuring the release of inorganic phosphate from 32P-labeled MyBP.

***Example 56: Interaction of Serine/Threonine Phosphatases with other Proteins***

Fusion protein of the invention having serine/threonine phosphatase activity (e.g., as determined in Example 55) are useful, for example, as research tools for the identification, characterization and purification of additional interacting proteins or receptor proteins, or other signal transduction pathway proteins. Briefly, a labeled fusion protein of the invention is useful as a reagent for the purification of molecules with which it interacts. In one embodiment of affinity purification, an albumin fusion protein of the

invention is covalently coupled to a chromatography column. Cell-free extract derived from putative target cells, such as neural or liver cells, is passed over the column, and molecules with appropriate affinity bind to the fusion protein. The fusion protein -complex is recovered from the column, dissociated, and the recovered molecule subjected to N-terminal protein sequencing. This amino acid sequence is then used to identify the captured molecule or to design degenerate oligonucleotide probes for cloning the relevant gene from an appropriate cDNA library.

***Example 57: Assaying for Heparanase Activity***

There are numerous assays known in the art that may be employed to assay for heparanase activity of an albumin fusion protein of the invention. In one example, heparanase activity of an albumin fusion protein of the invention, is assayed as described by Vlodavsky et al., (Vlodavsky et al., Nat. Med., 5:793-802 (1999)). Briefly, cell lysates, conditioned media, intact cells ( $1 \times 10^6$  cells per 35-mm dish), cell culture supernatant, or purified fusion protein are incubated for 18 hrs at 37°C, pH 6.2-6.6, with  $^{35}\text{S}$ -labeled ECM or soluble ECM derived peak I proteoglycans. The incubation medium is centrifuged and the supernatant is analyzed by gel filtration on a Sepharose CL-6B column (0.9 x 30 cm). Fractions are eluted with PBS and their radioactivity is measured. Degradation fragments of heparan sulfate side chains are eluted from Sepharose 6B at  $0.5 < K_{av} < 0.8$  (peak II). Each experiment is done at least three times. Degradation fragments corresponding to "peak II," as described by Vlodavsky et al., is indicative of the activity of an albumin fusion protein of the invention in cleaving heparan sulfate.

***Example 58: Immobilization of biomolecules***

This example provides a method for the stabilization of an albumin fusion protein of the invention in non-host cell lipid bilayer constructs (see, e.g., Bieri et al., Nature Biotech 17:1105-1108 (1999), hereby incorporated by reference in its entirety herein) which can be adapted for the study of fusion proteins of the invention in the various functional assays described above. Briefly, carbohydrate-specific chemistry for biotinylation is used to confine a biotin tag to an albumin fusion protein of the invention, thus allowing uniform orientation upon immobilization. A 50uM solution of an albumin fusion protein of the invention in washed membranes is incubated with 20 mM NaIO<sub>4</sub> and

1.5 mg/ml (4mM) BACH or 2 mg/ml (7.5mM) biotin-hydrazide for 1 hr at room temperature (reaction volume, 150ul). Then the sample is dialyzed (Pierce Slidealizer Cassett, 10 kDa cutoff; Pierce Chemical Co., Rockford IL) at 4C first for 5 h, exchanging the buffer after each hour, and finally for 12 h against 500 ml buffer R (0.15 M NaCl, 1 mM MgCl<sub>2</sub>, 10 mM sodium phosphate, pH7). Just before addition into a cuvette, the sample is diluted 1:5 in buffer ROG50 (Buffer R supplemented with 50 mM octylglucoside).

*Example 59: Assays for Metalloproteinase Activity*

10 Metalloproteinases are peptide hydrolases which use metal ions, such as Zn<sup>2+</sup>, as the catalytic mechanism. Metalloproteinase activity of an albumin fusion protein of the present invention can be assayed according to methods known in the art. The following exemplary methods are provided:

*Proteolysis of alpha-2-macroglobulin*

15 To confirm protease activity, a purified fusion protein of the invention is mixed with the substrate alpha-2-macroglobulin (0.2 unit/ml; Boehringer Mannheim, Germany) in 1x assay buffer (50 mM HEPES, pH 7.5, 0.2 M NaCl, 10 mM CaCl<sub>2</sub>, 25 μM ZnCl<sub>2</sub> and 0.05% Brij-35) and incubated at 37°C for 1-5 days. Trypsin is used as positive control. Negative controls contain only alpha-2-macroglobulin in assay buffer. The samples are  
20 collected and boiled in SDS-PAGE sample buffer containing 5% 2-mercaptoethanol for 5-min, then loaded onto 8% SDS-polyacrylamide gel. After electrophoresis the proteins are visualized by silver staining. Proteolysis is evident by the appearance of lower molecular weight bands as compared to the negative control.

25 *Inhibition of alpha-2-macroglobulin proteolysis by inhibitors of metalloproteinases*

Known metalloproteinase inhibitors (metal chelators (EDTA, EGTA, AND HgCl<sub>2</sub>), peptide metalloproteinase inhibitors (TIMP-1 and TIMP-2), and commercial small molecule MMP inhibitors) may also be used to characterize the proteolytic activity  
30 of an albumin fusion protein of the invention. Three synthetic MMP inhibitors that may be used are: MMP inhibitor I, [IC<sub>50</sub> = 1.0 μM against MMP-1 and MMP-8; IC<sub>50</sub> = 30 μM against MMP-9; IC<sub>50</sub> = 150 μM against MMP-3]; MMP-3 (stromelysin-1) inhibitor I [IC<sub>50</sub>

= 5  $\mu$ M against MMP-3], and MMP-3 inhibitor II [ $K_i$  = 130 nM against MMP-3]; inhibitors available through Calbiochem, catalog # 444250, 444218, and 444225, respectively). Briefly, different concentrations of the small molecule MMP inhibitors are mixed with a purified fusion protein of the invention (50 $\mu$ g/ml) in 22.9  $\mu$ l of 1x HEPES buffer (50 mM HEPES, pH 7.5, 0.2 M NaCl, 10 mM CaCl<sub>2</sub>, 25  $\mu$ M ZnCl<sub>2</sub> and 0.05%Brij-35) and incubated at room temperature (24 °C) for 2-hr, then 7.1  $\mu$ l of substrate alpha-2-macroglobulin (0.2 unit/ml) is added and incubated at 37°C for 20-hr. The reactions are stopped by adding 4x sample buffer and boiled immediately for 5 minutes. After SDS-PAGE, the protein bands are visualized by silver stain.

#### *Synthetic Fluorogenic Peptide Substrates Cleavage Assay*

The substrate specificity for fusion proteins of the invention with demonstrated metalloproteinase activity may be determined using techniques known in the art, such as using synthetic fluorogenic peptide substrates (purchased from BACHEM Bioscience Inc).

Test substrates include, M-1985, M-2225, M-2105, M-2110, and M-2255. The first four are MMP substrates and the last one is a substrate of tumor necrosis factor- $\alpha$  (TNF- $\alpha$ ) converting enzyme (TACE). These substrates are preferably prepared in 1:1 dimethyl sulfoxide (DMSO) and water. The stock solutions are 50-500  $\mu$ M. Fluorescent assays are performed by using a Perkin Elmer LS 50B luminescence spectrometer equipped with a constant temperature water bath. The excitation  $\lambda$  is 328 nm and the emission  $\lambda$  is 393 nm. Briefly, the assay is carried out by incubating 176  $\mu$ l 1x HEPES buffer (0.2 M NaCl, 10 mM CaCl<sub>2</sub>, 0.05% Brij-35 and 50 mM HEPES, pH 7.5) with 4  $\mu$ l of substrate solution (50  $\mu$ M) at 25 °C for 15 minutes, and then adding 20  $\mu$ l of a purified fusion protein of the invention into the assay cuvet. The final concentration of substrate is 1  $\mu$ M. Initial hydrolysis rates are monitored for 30-min.

#### *Example 60: Identification and Cloning of VH and VL domains*

One method to identify and clone VH and VL domains from cell lines expressing a particular antibody is to perform PCR with VH and VL specific primers on cDNA made from the antibody expressing cell lines. Briefly, RNA is isolated from the cell lines and used as a template for RT-PCR designed to amplify the VH and VL domains of the antibodies expressed by the EBV cell lines. Cells may be lysed in the TRIzol® reagent

(Life Technologies, Rockville, MD) and extracted with one fifth volume of chloroform. After addition of chloroform, the solution is allowed to incubate at room temperature for 10 minutes, and the centrifuged at 14,000 rpm for 15 minutes at 4°C in a tabletop centrifuge. The supernatant is collected and RNA is precipitated using an equal volume of isopropanol. Precipitated RNA is pelleted by centrifuging at 14,000 rpm for 15 minutes at 4°C in a tabletop centrifuge. Following centrifugation, the supernatant is discarded and washed with 75% ethanol. Following washing, the RNA is centrifuged again at 800 rpm for 5 minutes at 4°C. The supernatant is discarded and the pellet allowed to air dry. RNA is dissolved in DEPC water and heated to 60°C for 10 minutes. Quantities of RNA can be determined using optical density measurements.

cDNA may be synthesized, according to methods well-known in the art, from 1.5-2.5 micrograms of RNA using reverse transcriptase and random hexamer primers. cDNA is then used as a template for PCR amplification of VH and VL domains. Primers used to amplify VH and VL genes are shown in Table 3. Typically a PCR reaction makes use of a single 5' primer and a single 3' primer. Sometimes, when the amount of available RNA template is limiting, or for greater efficiency, groups of 5' and/or 3' primers may be used. For example, sometimes all five VH-5' primers and all JH3' primers are used in a single PCR reaction. The PCR reaction is carried out in a 50 microliter volume containing 1X PCR buffer, 2mM of each dNTP, 0.7 units of High Fidelity Taq polymerase, 5' primer mix, 3' primer mix and 7.5 microliters of cDNA. The 5' and 3' primer mix of both VH and VL can be made by pooling together 22 pmole and 28 pmole, respectively, of each of the individual primers. PCR conditions are: 96°C for 5 minutes; followed by 25 cycles of 94°C for 1 minute, 50°C for 1 minute, and 72°C for 1 minute; followed by an extension cycle of 72°C for 10 minutes. After the reaction is completed, sample tubes are stored at 4°C.

Table 3: Primer Sequences Used to Amplify VH and VL domains.

	Primer name	SEQ ID NO	Primer Sequence (5'-3')
	VH Primers		
5	Hu VH1-5'	36	CAGGTGCAGCTGGTGCAGTCTGG
	Hu VH2-5'	37	CAGGTCAACTTAAGGGAGTCTGG
	Hu VH3-5'	38	GAGGTGCAGCTGGTGGAGTCTGG
	Hu VH4-5'	39	CAGGTGCAGCTGCAGGAGTCGGG
	Hu VH5-5'	40	GAGGTGCAGCTGTTGCAGTCTGC
10	Hu VH6-5'	41	CAGGTACAGCTGCAGCAGTCAGG
	Hu JH1,2-5'	42	TGAGGAGACGGTGACCAGGGTGCC
	Hu JH3-5'	43	TGAAGAGACGGTGACCATTGTCCC
	Hu JH4,5-5'	44	TGAGGAGACGGTGACCAGGGTCC
	Hu JH6-5'	45	TGAGGAGACGGTGACCGTGGTCCC
15	VL Primers		
	Hu Vkappa1-5'	46	GACATCCAGATGACCCAGTCTCC
	Hu Vkappa2a-5'	47	GATGTTGTGATGACTCAGTCTCC
	Hu Vkappa2b-5'	48	GATATTGTGATGACTCAGTCTCC
20	Hu Vkappa3-5'	49	GAAATTGTGTTGACGCAGTCTCC
	Hu Vkappa4-5'	50	GACATCGTGATGACCCAGTCTCC
	Hu Vkappa5-5'	51	GAAACGACACTCACGCAGTCTCC
	Hu Vkappa6-5'	52	GAAATTGTGCTGACTCAGTCTCC
	Hu Vlambd1-5'	53	CAGTCTGTGTTGACGCAGCCGCC
25	Hu Vlambd2-5'	54	CAGTCTGCCCTGACTCAGCCTGC
	Hu Vlambd3-5'	55	TCCTATGTGCTGACTCAGCCACC
	Hu Vlambd3b-5'	56	TCTTCTGAGCTGACTCAGGACCC
	Hu Vlambd4-5'	57	CACGTTATACTGACTCAACCGCC
	Hu Vlambd5-5'	58	CAGGCTGTGCTCACTCAGCCGTC
30	Hu Vlambd6-5'	59	AATTTTATGCTGACTCAGCCCCA
	Hu Jkappa1-3'	60	ACGTTTGATTTCCACCTTGGTCCC
	Hu Jkappa2-3'	61	ACGTTTGATCTCCAGCTTGGTCCC
	Hu Jkappa3-3'	62	ACGTTTGATATCCACTTTGGTCCC
	Hu Jkappa4-3'	63	ACGTTTGATCTCCACCTTGGTCCC
35	Hu Jkappa5-3'	64	ACGTTTAATCTCCAGTCGTGTCCC
	Hu Jlambd1-3'	65	CAGTCTGTGTTGACGCAGCCGCC
	Hu Jlambd2-3'	66	CAGTCTGCCCTGACTCAGCCTGC
	Hu Jlambd3-3'	67	TCCTATGTGCTGACTCAGCCACC
	Hu Jlambd3b-3'	68	TCTTCTGAGCTGACTCAGGACCC
40	Hu Jlambd4-3'	69	CACGTTATACTGACTCAACCGCC
	Hu Jlambd5-3'	70	CAGGCTGTGCTCACTCAGCCGTC
	Hu Jlambd6-3'	71	AATTTTATGCTGACTCAGCCCCA



PCR samples are then electrophoresed on a 1.3% agarose gel. DNA bands of the expected sizes (~506 base pairs for VH domains, and 344 base pairs for VL domains) can be cut out of the gel and purified using methods well known in the art. Purified PCR products can be ligated into a PCR cloning vector (TA vector from Invitrogen Inc.,  
5 Carlsbad, CA). Individual cloned PCR products can be isolated after transfection of E. coli and blue/white color selection. Cloned PCR products may then be sequenced using methods commonly known in the art.

The PCR bands containing the VH domain and the VL domains can also be used to create full-length Ig expression vectors. VH and VL domains can be cloned into vectors  
10 containing the nucleotide sequences of a heavy (e.g., human IgG1 or human IgG4) or light chain (human kappa or human lambda) constant regions such that a complete heavy or light chain molecule could be expressed from these vectors when transfected into an appropriate host cell. Further, when cloned heavy and light chains are both expressed in one cell line (from either one or two vectors), they can assemble into a complete functional  
15 antibody molecule that is secreted into the cell culture medium. Methods using polynucleotides encoding VH and VL antibody domain to generate expression vectors that encode complete antibody molecules are well known within the art.

20 It will be clear that the invention may be practiced otherwise than as particularly described in the foregoing description and examples. Numerous modifications and variations of the present invention are possible in light of the above teachings and, therefore, are within the scope of the appended claims.

The entire disclosure of each document cited (including patents, patent  
25 applications, patent publications, journal articles, abstracts, laboratory manuals, books, or other disclosures) as well as information available through Identifiers specific to databases such as GenBank, GeneSeq, or the CAS Registry, referred to in this application are herein incorporated by reference in their entirety. The specification and sequence listing of each of the following U.S. applications are herein incorporated by reference in their entirety:

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Furthermore, the contents and sequence listings of Application Nos. 09/091,873 filed June 25, 1998; 60/229,358 filed on April 12, 2000; 60/199,384 filed on April 25, 2000 and 60/256,931 filed on December 21, 2000 are hereby incorporation by reference  
5 in their entirety.

**What is claimed:**

1. An albumin fusion protein comprising a Therapeutic protein:X and albumin comprising the amino acid sequence of SEQ ID NO:18.
2. An albumin fusion protein comprising a Therapeutic protein:X and a fragment or a variant of the amino acid sequence of SEQ ID NO:18, wherein said fragment or variant has albumin activity.
3. The albumin fusion protein of claim 2, wherein said albumin activity is the ability to prolong the shelf life of the Therapeutic protein:X compared to the shelf-life of the Therapeutic protein:X in an unfused state.
4. The albumin fusion protein of claim 2, wherein the fragment or variant comprises the amino acid sequence of amino acids 1-387 of SEQ ID NO:18.
5. An albumin fusion protein comprising a fragment or variant of a Therapeutic protein:X, and albumin comprising the amino acid sequence of SEQ ID NO:18, wherein said fragment or variant has a biological activity of the Therapeutic protein:X.
6. The albumin fusion protein of any one of claims 1-5, wherein the Therapeutic protein:X, or fragment or variant thereof, is fused to the N-terminus of albumin, or the N-terminus of the fragment or variant of albumin.
7. The albumin fusion protein of any one of claims 1-5, wherein the Therapeutic protein:X, or fragment or variant thereof, is fused to the C-terminus of albumin, or the C-terminus of the fragment or variant of albumin.
8. The albumin fusion protein of any one of claims 1-5, wherein the Therapeutic protein:X, or fragment or variant thereof, is fused to the N-terminus and C-terminus of albumin, or the N-terminus and the C-terminus of the fragment or variant of albumin.

9. The albumin fusion protein of any one of claims 1-5, which comprises a first Therapeutic protein:X, or fragment or variant thereof, and a second Therapeutic protein:X, or fragment or variant thereof, wherein said first Therapeutic protein:X, or fragment or variant thereof, is different from said second Therapeutic protein:X, or fragment or variant thereof.

10. The albumin fusion protein of any one of claims 1-8, wherein the Therapeutic protein:X, or fragment or variant thereof, is separated from the albumin or the fragment or variant of albumin by a linker.

11. The albumin fusion protein of any one of claims 1-8, wherein the albumin fusion protein has the following formula:

R1-L-R2; R2-L-R1; or R1-L-R2-L-R1,

wherein R1 is Therapeutic protein:X, or fragment or variant thereof, L is a peptide linker, and R2 is albumin comprising the amino acid sequence of SEQ ID NO:18 or fragment or variant of albumin.

12. The albumin fusion protein of any one of claims 1-11, wherein the shelf-life of the albumin fusion protein is greater than the shelf-life of the Therapeutic protein:X in an unfused state.

13. The albumin fusion protein of any one of claims 1-11, wherein the in vitro biological activity of the Therapeutic protein:X, or fragment or variant thereof, fused to albumin, or fragment or variant thereof, is greater than the in vitro biological activity of the Therapeutic protein:X, or a fragment or variant thereof, in an unfused state.

14. The albumin fusion protein of any one of claims 1-11, wherein the in vivo biological activity of the Therapeutic protein:X, or fragment or variant thereof, fused to albumin, or fragment or variant thereof, is greater than the in vivo biological activity of the Therapeutic protein:X, or a fragment or variant thereof, in an unfused state.

15. An albumin fusion protein comprising a Therapeutic protein:X, or fragment or variant thereof, inserted into an albumin comprising the amino acid sequence of SEQ ID NO:18 or fragment or variant thereof.

16. An albumin fusion protein comprising a Therapeutic protein:X, or fragment or variant thereof, inserted into an albumin comprising an amino acid sequence selected from the group consisting of:

- (a) amino acids 54 to 61 of SEQ ID NO:18;
- (b) amino acids 76 to 89 of SEQ ID NO:18;
- (c) amino acids 92 to 100 of SEQ ID NO:18;
- (d) amino acids 170 to 176 of SEQ ID NO:18;
- (e) amino acids 247 to 252 of SEQ ID NO:18;
- (f) amino acids 266 to 277 of SEQ ID NO:18;
- (g) amino acids 280 to 288 of SEQ ID NO:18;
- (h) amino acids 362 to 368 of SEQ ID NO:18;
- (i) amino acids 439 to 447 of SEQ ID NO:18;
- (j) amino acids 462 to 475 of SEQ ID NO:18;
- (k) amino acids 478 to 486 of SEQ ID NO:18; and
- (l) amino acids 560 to 566 of SEQ ID NO:18.

17. The albumin fusion protein of claims 15 or 16, wherein said albumin fusion protein comprises a portion of albumin sufficient to prolong the shelf-life of the Therapeutic protein:X, or fragment or variant thereof, as compared to the shelf-life of the Therapeutic protein:X , or a fragment or variant thereof, in an unfused state.

18. The albumin fusion protein of claims 15 or 16, wherein said albumin fusion protein comprises a portion of albumin sufficient to prolong the in vitro biological activity of the Therapeutic protein:X, or fragment or variant thereof, fused to albumin as compared to the in vitro biological activity of the Therapeutic protein:X , or a fragment or variant thereof, in an unfused state.

19. The albumin fusion protein of claims 15 or 16 wherein said albumin fusion protein comprises a portion of albumin sufficient to prolong the in vivo biological activity



of the Therapeutic protein:X, or fragment or variant thereof, fused to albumin compared to the in vivo biological activity of the Therapeutic protein:X, or a fragment or variant thereof, in an unfused state.

20. The albumin fusion protein of any one of claims 1-19, which is non-glycosylated.

21. The albumin fusion protein of any one of claims 1-19, which is expressed in yeast.

22. The albumin fusion protein of claim 21, wherein the yeast is glycosylation deficient.

23. The albumin fusion protein of claim 21 wherein the yeast is glycosylation and protease deficient.

24. The albumin fusion protein of any one of claims 1-19, which is expressed by a mammalian cell.

25. The albumin fusion protein of any one of claims 1-19, wherein the albumin fusion protein is expressed by a mammalian cell in culture.

26. The albumin fusion protein of any one of claims 1-19, wherein the albumin fusion protein further comprises a secretion leader sequence.

27. A composition comprising the albumin fusion protein of any one of claims 1-26 and a pharmaceutically acceptable carrier.

28. A kit comprising the composition of claim 27.

29. A method of treating a disease or disorder in a patient, comprising the step of administering the albumin fusion protein of any one of claims 1-26.

30. The method of claim 29, wherein the disease or disorder comprises indication:Y.

31. A method of treating a patient with a disease or disorder that is modulated by Therapeutic protein:X, or fragment or variant thereof, comprising the step of administering an effective amount of the albumin fusion protein of any one of claims 1-26.

32. The method of claim 31, wherein the disease or disorder is indication:Y.

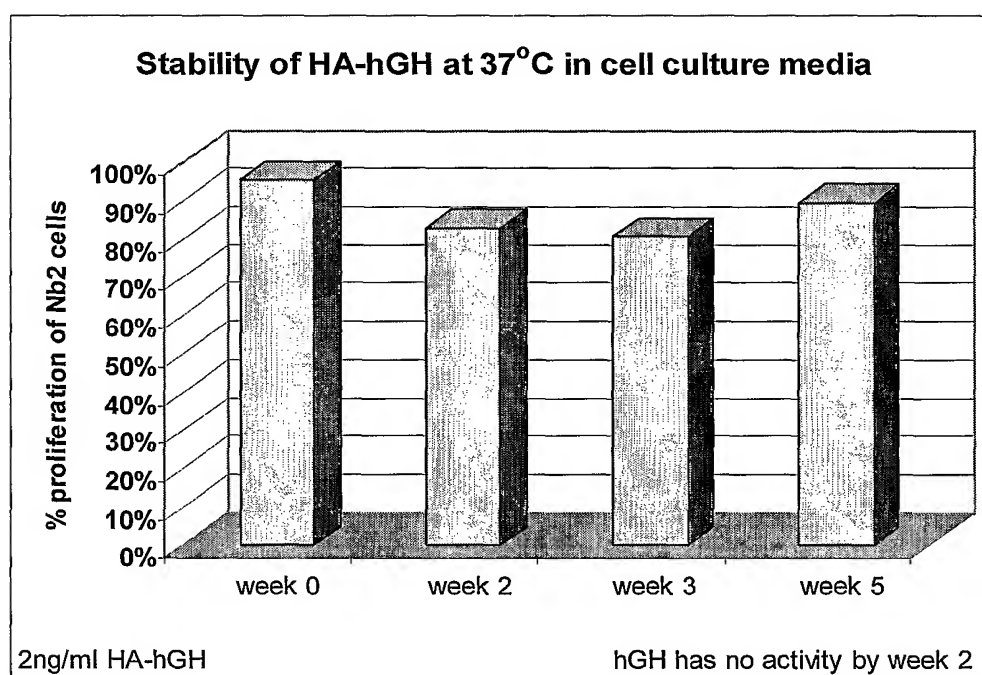
33. A method of extending the shelf life of Therapeutic protein:X comprising the step of fusing the Therapeutic protein:X, or fragment or variant thereof, to albumin or a fragment or variant thereof, sufficient to extend the shelf-life of the Therapeutic protein:X, or fragment or variant thereof, compared to the shelf-life of the Therapeutic protein:X, or a fragment or variant thereof, in an unfused state.

34. A nucleic acid molecule comprising a polynucleotide sequence encoding the albumin fusion protein of any one of claims 1-26.

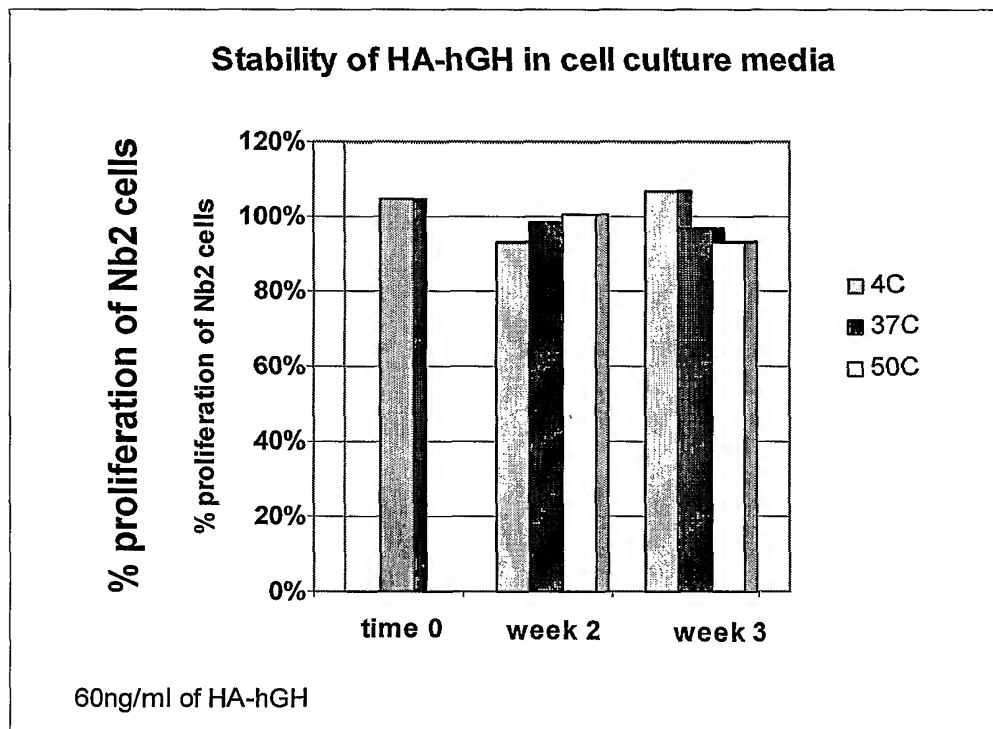
35. A vector comprising the nucleic acid molecule of claim 34.

36. A host cell comprising the nucleic acid molecule of claim 35.

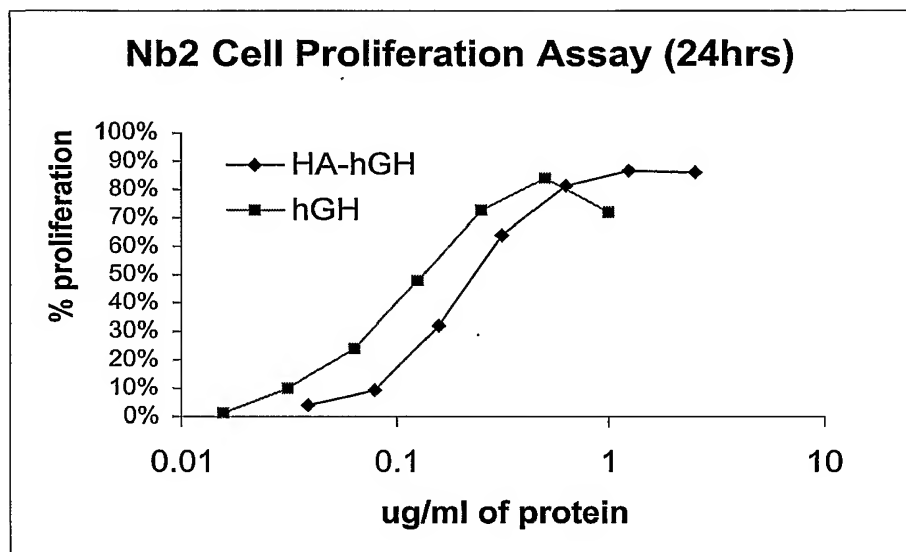
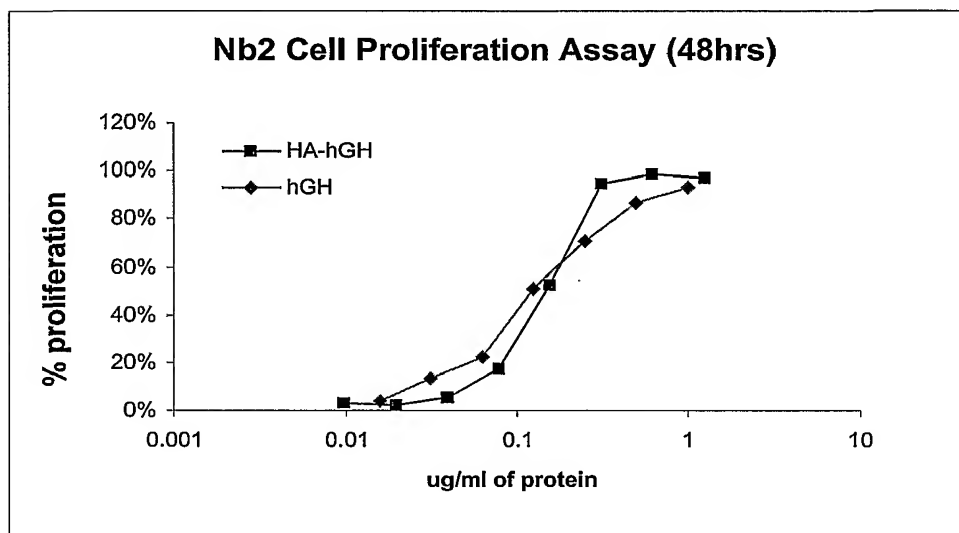
1/20

**Figure 1**

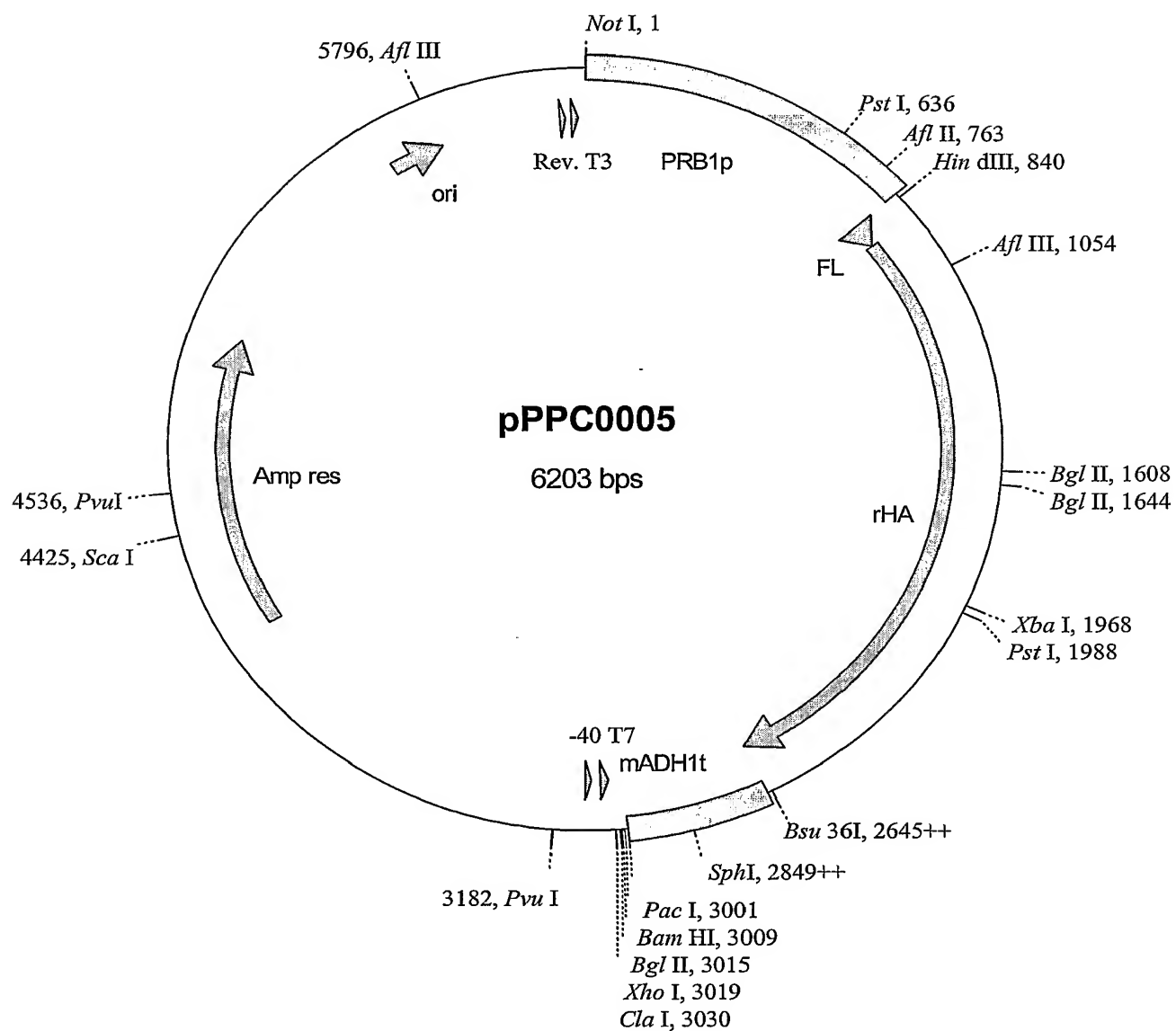
2/20

**Figure 2**

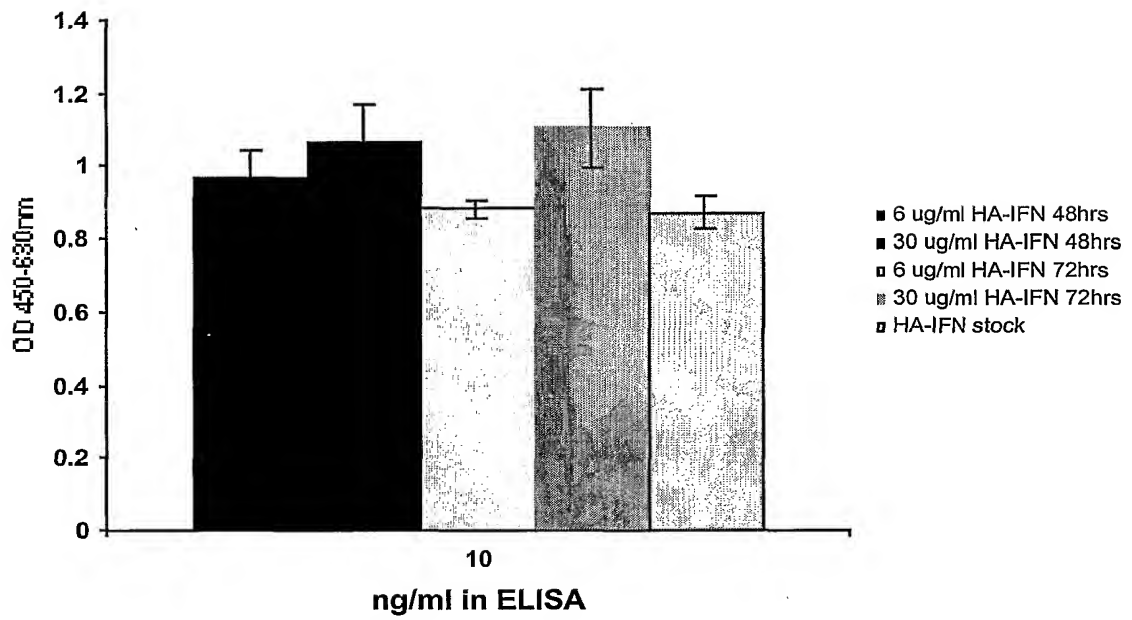
3/20

**Figure 3A****Figure 3B**

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**Figure 4**

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**Figure 5**

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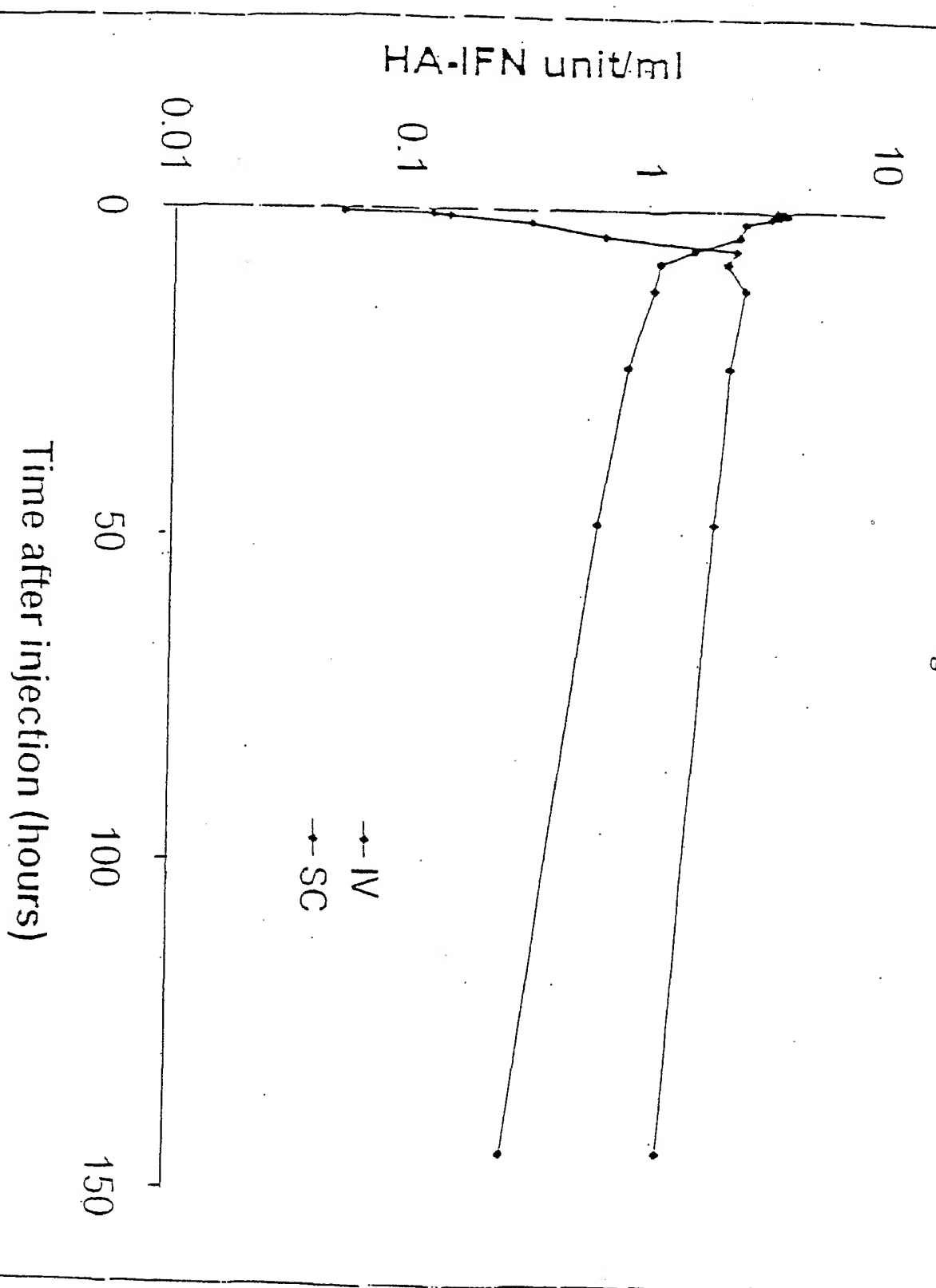


Figure 6



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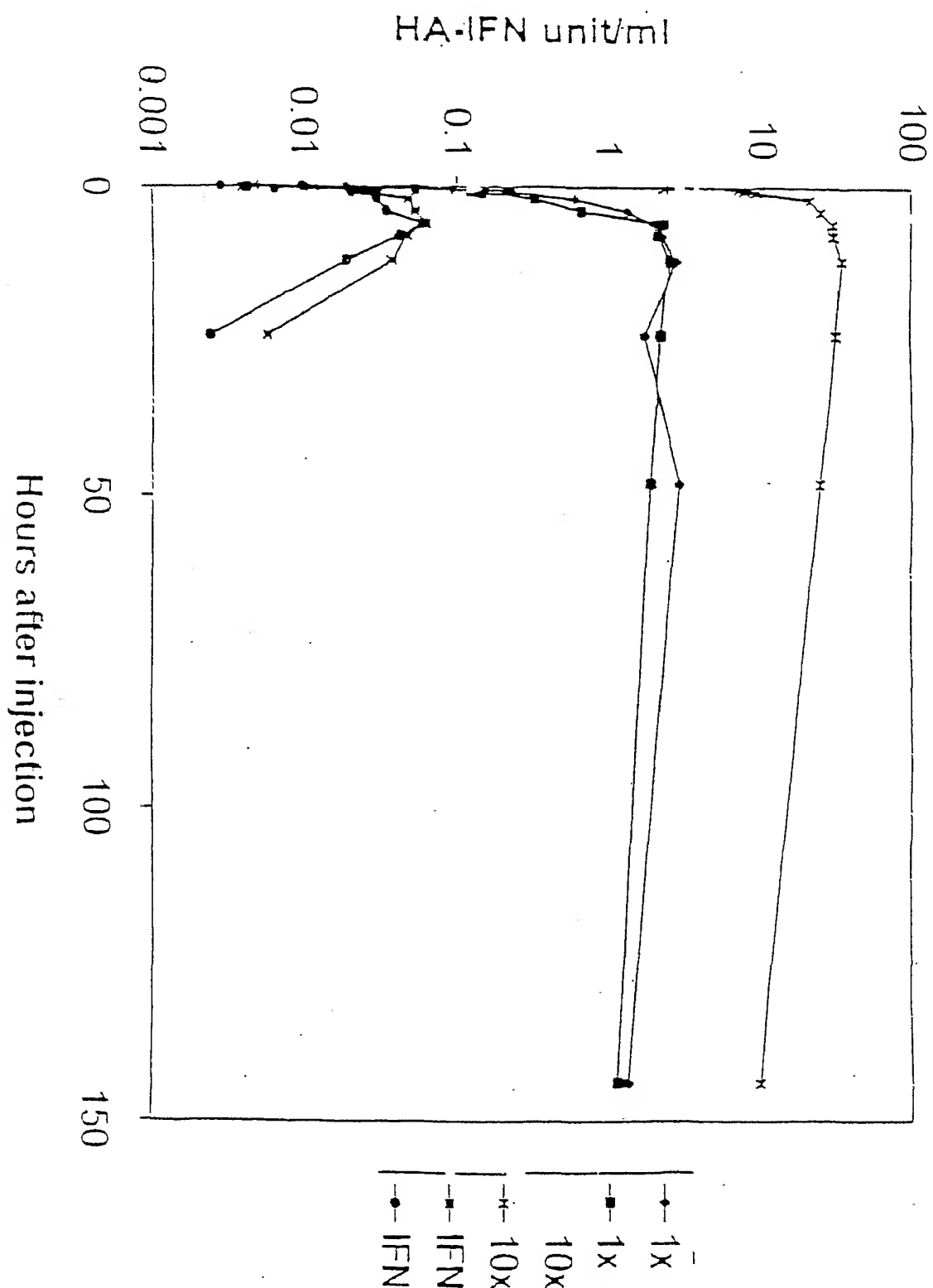
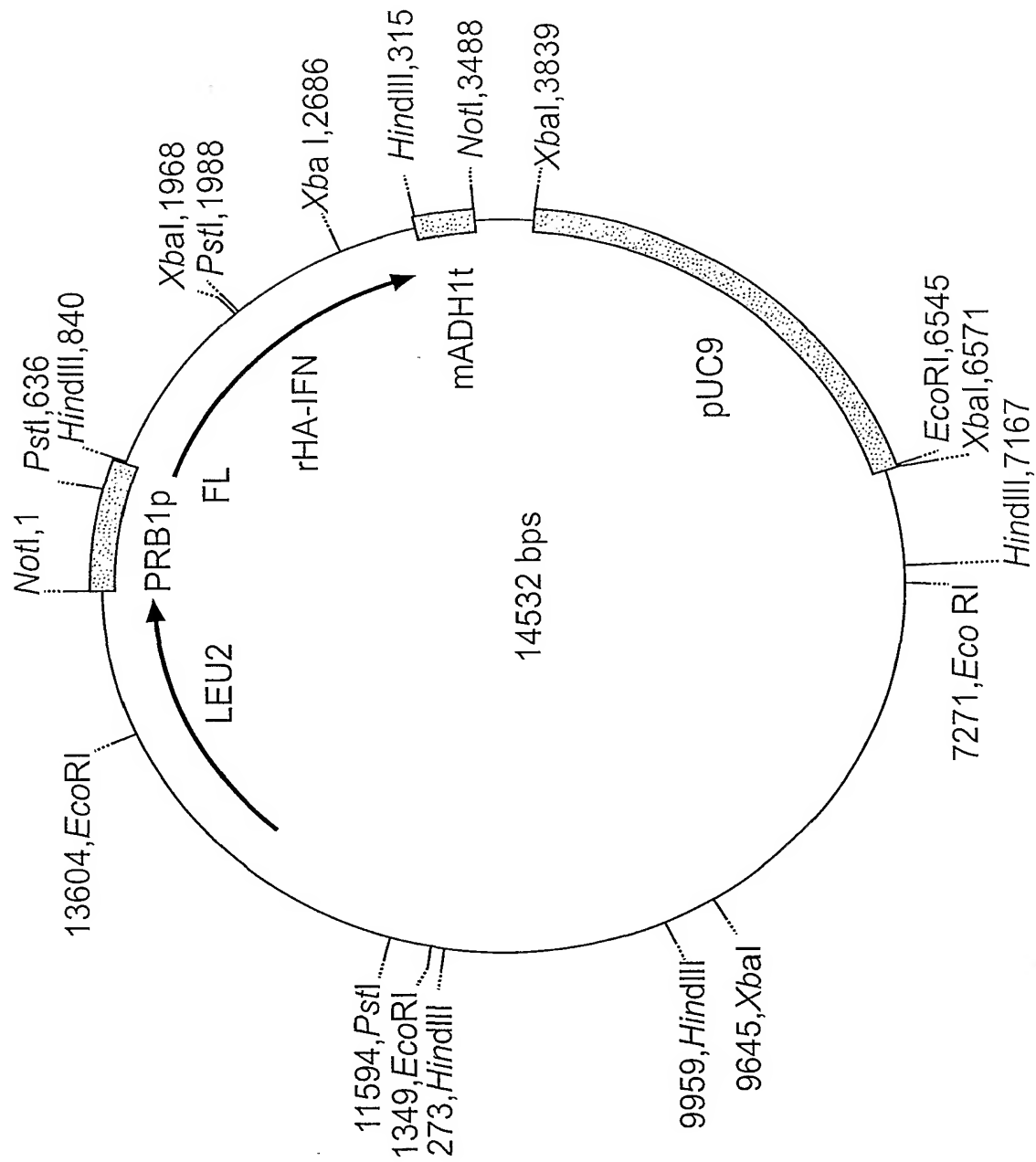


Figure 7

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**FIG. 8**

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**Localisation of 'Loops' based on the HA Crystal Structure  
which could be used for Mutation/Insertion**

1	DAHKSEVAHR	FKDLGEENFK	ALVLIAFAQY	LQQCPFEDHV	KLVNEVTEFA
	HHHHH	HHH	HHH	HHHHHHHHHH	HHHHH
	<b>I</b>		<b>II</b>		<b>III</b>
51	KTCV <u>ADESAE</u>	NCDKSLHTLF	GDKLC <u>TVATL</u>	<u>RETYGEMADC</u>	<u>CAKOE</u> PERNE
	HHHHH	HHHHH	HHHHH	HHHH	H
101	CFLQHKDDNP	NLPRLVRPEV	DVMCTAFHDN	EETFLKKYLY	EIARRHPYFY
	HHHH	H	HHHHHHHH	HHHHHHHHHH	HHHHH
	<b>IV</b>				
151	APELLFFAKR	YKAAFTECCO	<u>AADKAA</u> CLLP	KLDELRLDEGK	ASSAKQRLKC
	HHHHHHHHHH	HHHHHHHHH	HHHHH	HHHEHHHHHH	HHHHHHHHHH
	<b>V</b>				
201	ASLQKFGERA	FKAWAVARLS	QRFPKAEFAE	VSKLVTDLTK	VHTECC <u>HGDL</u>
	HHHHH	HH	HHHHHHHHHH	HH	HHH
	<b>VI</b>		<b>VII</b>		
251	<u>LECADDRADL</u>	AKYICE <u>NODS</u>	<u>ISSKLKECCE</u>	<u>KPLLEKSHCI</u>	AEVENDEMPA
	HHHHHHHHHH	HHHHH	HHHHH	HHHHHHH	H
301	DLPSLAADFV	ESKDVCKNYA	EAKDVFLGMF	LYEYARRHPD	YSVVLLRLA
	HHHH	HHHHHH	HHHHHHH	HHHHHH	HHHHHHHH
	<b>VIII</b>				
351	KTYETTLEKC	<u>CAAADP</u> HECY	AKVFDEFKPL	VEEPQNLIKQ	NCELFEOQLGE
	HHHHHHHHHH	HH	H	HHHHH	HHHHHHHHHH
	<b>IX</b>				
401	YKFQNALLV	YTKKVPQVST	PTLVEVSRNL	GKVGSKCCKH	<u>PEAKRMP</u> CAE
	HHHHHHHHHH	HHHH	H	HHHHHHHHHH	HHH
	<b>X</b>		<b>XI</b>		
451	DYLSVVLNQL	<u>CVLHEKTPVS</u>	<u>DRVTKCTES</u>	<u>LVNRRPPCFSA</u>	LEVDETYVPK
	HHHHHHHHHH	HHHHH	HHHHHHHHH	HHHHHHHH	
501	EFNAETFTFH	ADICTLSEKE	RQIKKQTALV	ELVKHKPKAT	KEQLKAVMDD
		HHH	HHH	HHHHHMEHHH	HHH
	<b>XII</b>				
551	FAAFVEKCKK	<u>ADDKET</u> CFAE	EGKKLVAASQ	AALGL	
	HHHHHHHH	HHHH	HHHHHHHHHH	HH	

**Loop**

I Val54-Asn61  
 II Thr76-Asp89  
 III Ala92-Glu100  
 IV Gln170-Ala176  
 V His247-Glu252  
 VI Glu266-Glu277

**Loop**

VII Glu280-His288  
 VIII Ala362-Glu368  
 IX Lys439-Pro447  
 X Val462-Lys475  
 XI Thr478-Pro486  
 XII Lys560-Thr566

**Figure 9**

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**Examples of Modifications to Loop IV****a. Randomisation of Loop IV.**

IV

```

151  APELLFFAKR YKAAFTECCQ AADKAACLLP KLDEL RDEGK ASSAKQRLKC
      HHHHHHHHHH HHHHHHHHHH      HHHHH HHHHHHHHHHH HHHHHHHHHHH

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IV

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151  APELLFFAKR YKAAFTECCX XXXXXXCLLP KLDEL RDEGK ASSAKQRLKC
      HHHHHHHHHH HHHHHHHHHH      HHHHH HHHHHHHHHHH HHHHHHHHHHH

```

**X** represents the mutation of the natural amino acid to any other amino acid. One, more or all of the amino acids can be changed in this manner. This figure indicates all the residues have been changed.

**b. Insertion (or replacement) of Randomised sequence into Loop IV.**

(X)<sub>n</sub>  
↓  
IV

```

151  APELLFFAKR YKAAFTECCQ AADKAACLLP KLDEL RDEGK ASSAKQRLKC
      HHHHHHHHHH HHHHHHHHHH      HHHHH HHHHHHHHHHH HHHHHHHHHHH

```

The insertion can be at any point on the loop and the length a length where n would typically be 6, 8, 12, 20 or 25.

**Figure 10**

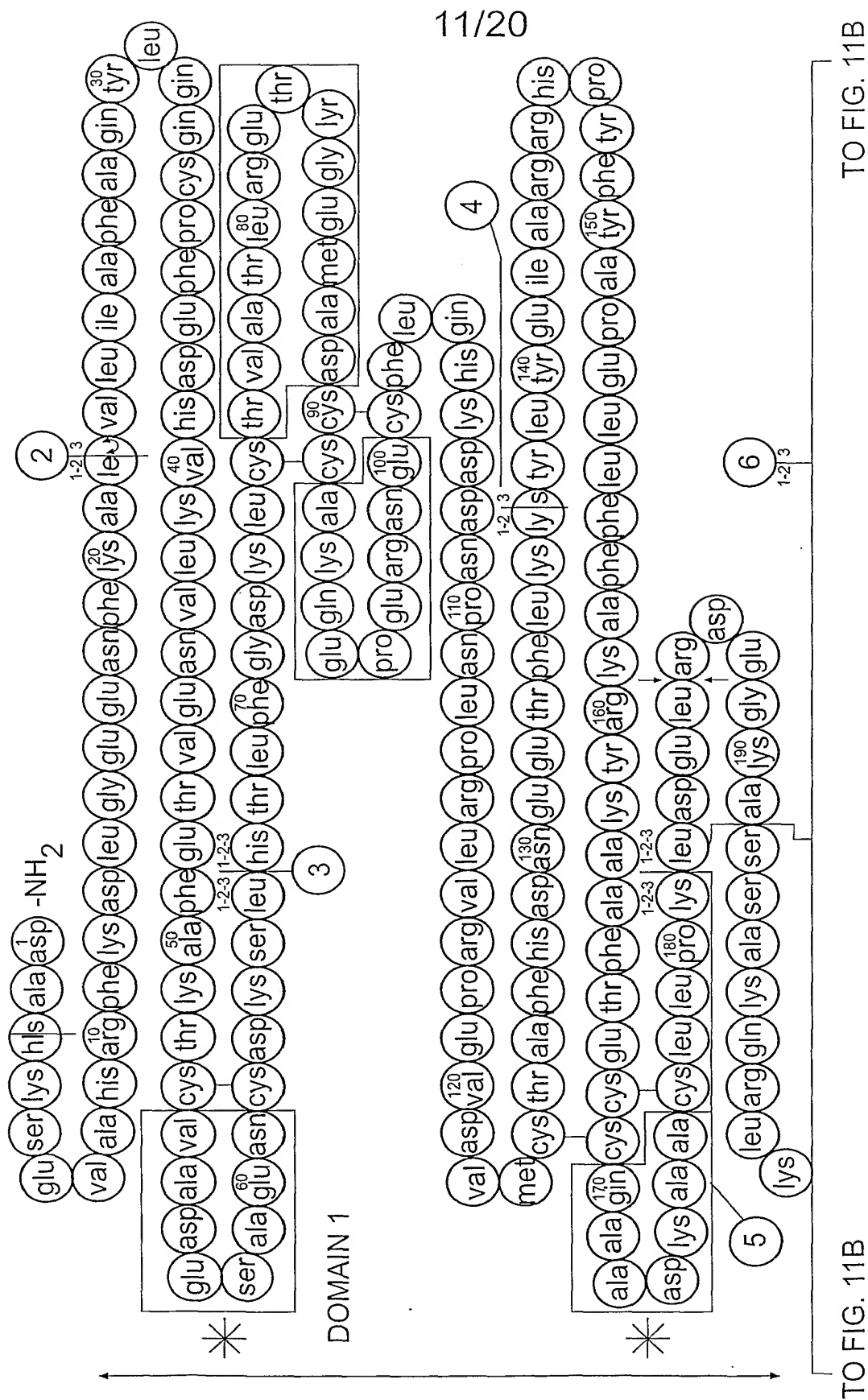
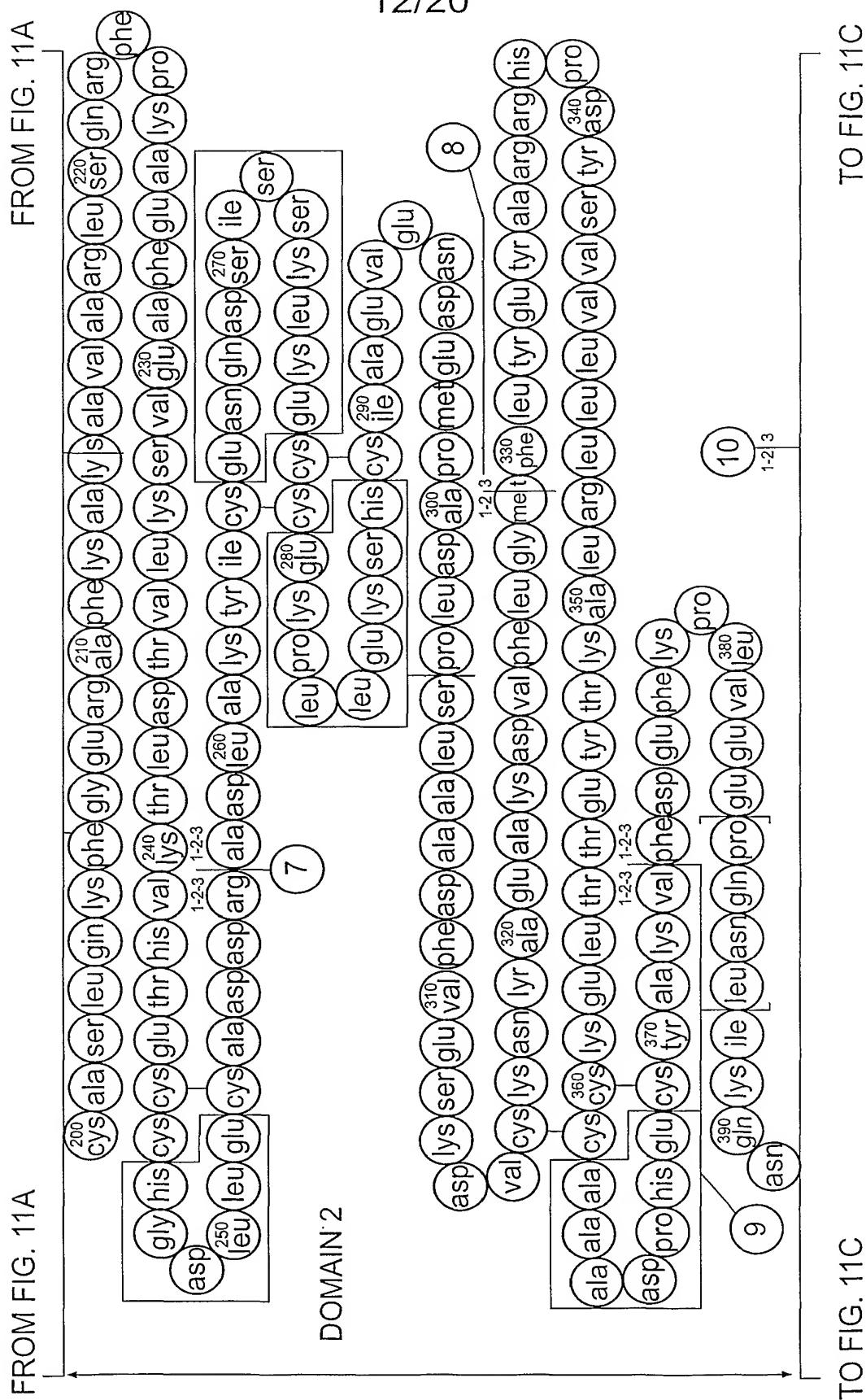


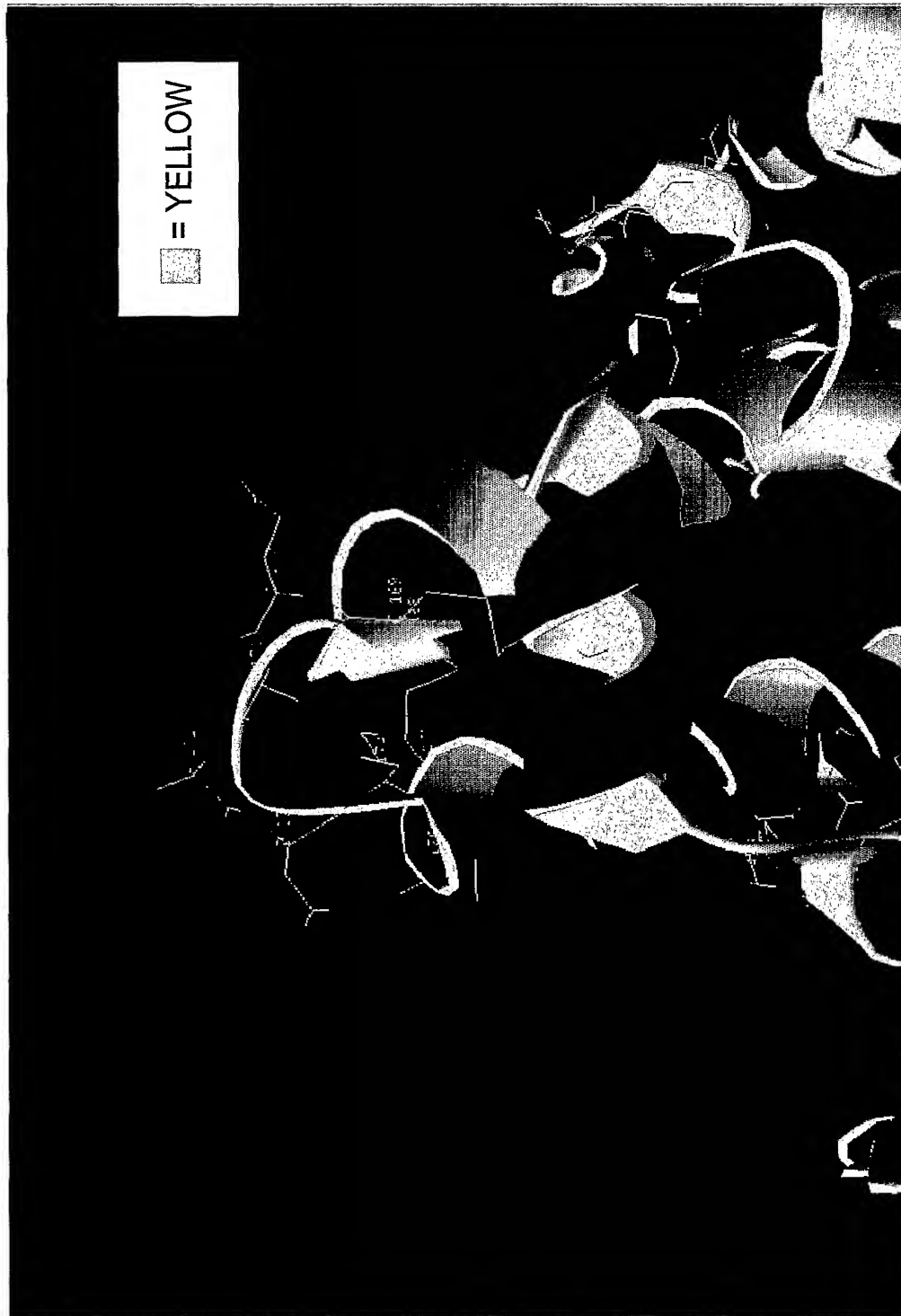
FIG. 11A



**FIG. 11B**



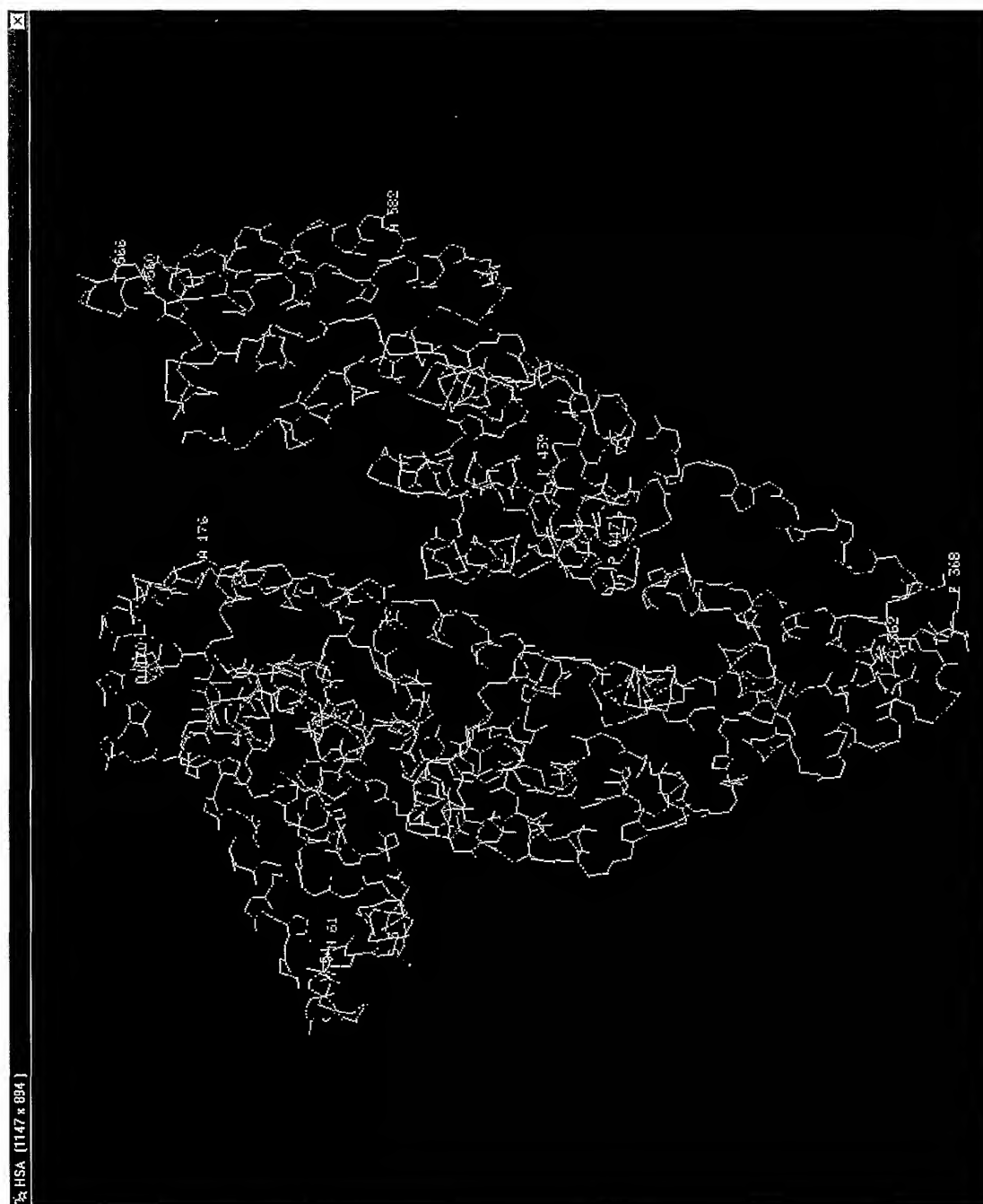
14/20



**FIG. 12:**  
**LOOP IV GLU170-A176**



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**FIG. 13**  
**TERTIARY STRUCTURE OF HA**

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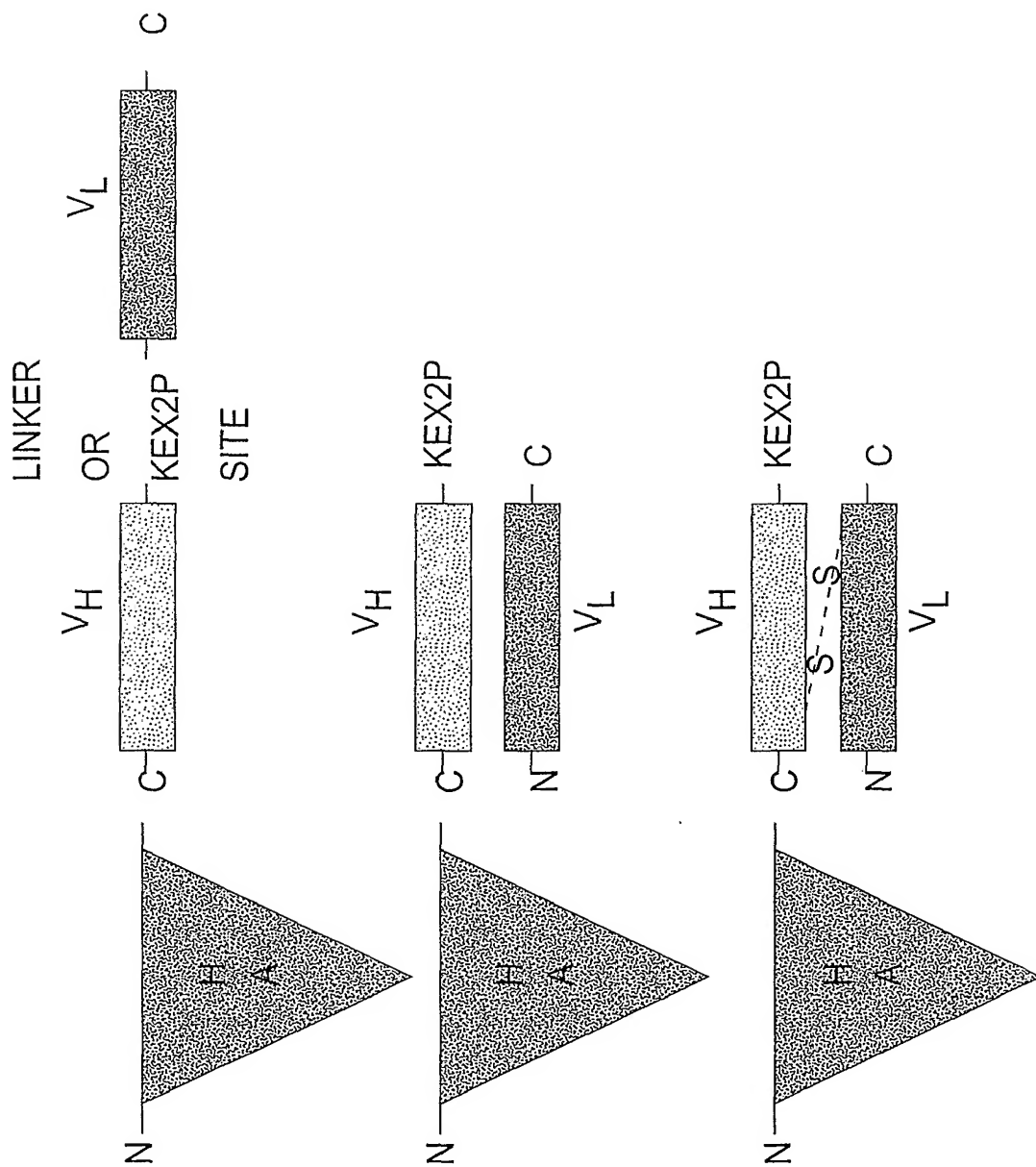


FIG. 14

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```

1  GAT GCA CAC AAG AGT GAG GTT GCT CAT CGG TTT AAA GAT TTG GGA GAA AAT TTC AAA 60
1 D  A  H  K  S  E  V  A  H  R  F  K  D  L  G  E  E  N  F  K  20

61  GCC TTG GTG TTG ATT GCC TTT GCT CAG TAT CTT CAG CAG TGT CCA TTT GAA GAT CAT GTA 120
21 A  L  V  L  I  A  F  A  Q  Y  L  Q  Q  C  P  F  E  D  H  V  40

121 AAA TTA GTG AAT GAA GTA ACT GAA TTT GCA AAA ACA TGT GTT GCT GAT GAG TCA GCT GAA 180
41 K  L  V  N  E  V  T  E  F  A  K  T  C  V  A  D  E  S  A  E  60

181 AAT TGT GAC AAA TCA CTT CAT ACC CTT TTT GGA GAC AAA TTA TGC ACA GTT GCA ACT CTT 240
61 N  C  D  K  S  L  H  T  L  F  G  D  K  L  C  T  V  A  T  L  80

241 CGT GAA ACC TAT GGT GAA ATG GCT GAC TGC TGT GCA AAA CAA GAA CCT GAG AGA AAT GAA 300
81 R  E  T  Y  G  E  M  A  D  C  C  A  K  Q  E  P  E  R  N  E  100

301 TGC TTC TTG CAA CAC AAA GAT GAC AAC CCA AAC CTC CCC CGA TTG GTG AGA CCA GAG GTT 360
101 C  F  L  Q  H  K  D  D  N  P  N  L  P  R  L  V  R  P  E  V  120

361 GAT GTG ATG TGC ACT GCT TTT CAT GAC AAT GAA GAG ACA TTT TTG AAA AAA TAC TTA TAT 420
121 D  V  M  C  T  A  F  H  D  N  E  E  T  F  L  K  K  Y  L  Y  140

421 GAA ATT GCC AGA AGA CAT CCT TAC TTT TAT GCC CCG GAA CTC CTT TTC TTT GCT AAA AGG 480
141 E  I  A  R  R  H  P  Y  F  Y  A  P  E  L  L  F  F  A  K  R  160

```

Figure 15A

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```

481 TAT AAA GCT GCT TTT ACA GAA TGT TGC CAA GCT GCT GAT AAA GCT GCC TGC CTG TTG CCA 540
161 Y K A A F T E C C Q A A D K A A C L L P 180

541 AAG CTC GAT GAA CTT CGG GAT GAA GGG AAG GCT TCG TCT GCC AAA CAG AGA CTC AAA TGT 600
181 K L D E L R D E G K A S S A K Q R L K C 200

601 GCC AGT CTC CAA AAA TTT GGA GAA AGA GCT TTC AAA GCA TGG GCA GTG GCT CGC CTG AGC 660
201 A S L Q K K F G E R A F K A W A V A R L S 220

661 CAG AGA TTT CCC AAA GCT GAG TTT GCA GAA GTT TCC AAG TTA GTG ACA GAT CTT ACC AAA 720
221 Q R F P K A E F A E V S K L V T D L T K 240

721 GTC CAC ACG GAA TGC TGC CAT GGA GAT CTG CTT GAA TGT GCT GAT GAC AGG GCG GAC CTT 780
241 V H T E C C H G D L L E C A D D R A D L 260

781 GCC AAG TAT ATC TGT GAA AAT CAG GAT TCG ATC TCC AGT AAA CTG AAG GAA TGC TGT GAA 840
261 A K Y I C E N Q D S I S S K L K E C C E 280

841 AAA CCT CTG TTG GAA AAA TCC CAC TGC ATT GCC GAA GTG GAA AAT GAT GAG ATG CCT GCT 900
281 K P L L E K S H C I A E V E N D E M P A 300

901 GAC TTG CCT TCA TTA GCT GCT GAT TTT GTT GAA AGT AAG GAT GTT TGC AAA AAC TAT GCT 960
301 D L P S L A A D F V E S K D V C K N Y A 320

```

Figure 15B

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```

961 GAG GCA AAG GAT GTC TTC CTG GGC ATG TTT TTG TAT GAA TAT GCA AGA AGG CAT CCT GAT 1020
321 E A K D V F L G M F L Y E Y A R R H P D 340

1021 TAC TCT GTC GTG CTG CTG CTG AGA CTT GCC AAG ACA TAT GAA ACC ACT CTA GAG AAG TGC 1080
341 Y S V V L L L R L A K T Y E T T L E K C 360

1081 TGT GCC GCT GCA GAT CCT CAT GAA TGC TAT GCC AAA GTG TTC GAT GAA TTT AAA CCT CTT 1140
361 C A A A D P H E C Y A K V F D E F K P L 380

1141 GTG GAA GAG CCT CAG AAT TTA ATC AAA CAA AAC TGT GAG CTT TTT GAG CAG CTT GGA GAG 1200
381 V E E P Q N L I K Q N C E L F E Q L G E 400

1201 TAC AAA TTC CAG AAT GCG CTA TTA GTT CGT TAC ACC AAG AAA GTA CCC CAA GTG TCA ACT 1260
401 Y K F Q N A L L V R Y T K K V P Q V S T 420

1261 CCA ACT CTT GTA GAG GTC TCA AGA AAC CTA GGA AAA GTG GGC AGC AAA TGT TGT AAA CAT 1320
421 P T L V E V S R N L G K V G S K C C K H 440

1321 CCT GAA GCA AAA AGA ATG CCC TGT GCA GAA GAC TAT CTA TCC GTG GTC AAC CAG TTA 1380
441 P E A K R M P C A E D Y L S V V L N Q L 460

1381 TGT GTG TTG CAT GAG AAA ACG CCA GTA AGT GAC AGA GTC ACA AAA TGC TGC ACA GAG TCC 1440
461 C V L H E K T P V S D R V T K C C T E S 480

```

Figure 15C

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```

1441 TTG GTG AAC AGG CGA CCA TGC TTT TCA GCT CTG GAA GTC GAT GAA ACA TAC GTT CCC AAA 1500
481 L V N R R R P C F S A L E V D E T Y V P K 500

1501 GAG TTT AAT GCT GAA ACA TTC ACC TTC CAT GCA GAT ATA TGC ACA CTT TCT GAG AAG GAG 1560
501 E F N A E T F T F H A D I C T L S E K E 520

1561 AGA CAA ATC AAG AAA CAA ACT GCA CTT GTT GAG CTT GTG AAA CAC AAG CCC AAG GCA ACA 1620
521 R Q I K K Q T A L V E L V K H K P K A T 540

1621 AAA GAG CAA CTG AAA GCT GTT ATG GAT GAT TTC GCA GCT TTT GTA GAG AAG TGC TGC AAG 1680
541 K E Q L K A A V M D D F A A F V E K C C K 560

1681 GCT GAC GAT AAG GAG ACC TGC TTT GCC GAG GAG GGT AAA AAA CTT GTT GCT GCA AGT CAA 1740
561 A D D K E T C F A E E G K K L V A A S Q 580

1741 GCT GCC TTA GGC TTA TAA CAT CTA CAT TTA AAA GCA TCT CAG 1782
581 A A L G L * 585

```

Figure 15D

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<120> Albumin Fusion Proteins

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<141> 2001-04-12

<150> 60/229, 358

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<150> 60/256, 931

<151> 2000-12-21

<150> 60/199, 384

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<210> 2

<211> 33

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<213> Artificial Sequence

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<223> primer useful to clone human growth hormone cDNA

<400> 2

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33

<210> 3

<211> 16

<212> DNA

<213> Artificial Sequence

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16

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17

<210> 5  
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17

<210> 6  
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<213> Artificial Sequence.

<220>  
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with non-cohesive ends.

<400> 6  
aattgttggg aataagcc

18

<210> 7  
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<223> invertase leader sequence

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<223> first 5 amino acids of mature human serum albumin

<400> 7

Met Leu Leu Gln Ala Phe Leu Phe Leu Leu Ala Gly Phe Ala Ala Lys  
1 5 10 15

Ile Ser Ala Asp Ala His Lys Ser  
20

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<211> 21

<212> DNA

<213> Artificial Sequence

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fragments with non-cohesive ends.

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21

<210> 9

<211> 27

<212> DNA

<213> Artificial Sequence

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<400> 9

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27

<210> 10

<211> 24

<212> DNA

<213> Artificial Sequence

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<221> misc\_structure

<223> synthetic oligonucleotide used to join DNA  
fragments with non-cohesive ends.

<400> 10

ctcttggtg catcgaagcc acag

24

<210> 11

<211> 30

<212> DNA

<213> Artificial Sequence

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<221> misc\_structure

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fragments with non-cohesive ends.

<400> 11  
tgtggaagag cctcagaatt tattcccaac

30

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fragments with non-cohesive ends.

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aattgttggg aataaattct gaggctcttc c

31

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47

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<211> 48  
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<213> Artificial Sequence

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fragments with non-cohesive ends.

<400> 14  
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48

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<211> 62  
<212> DNA  
<213> Artificial Sequence

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fragments with non-cohesive ends.

<400> 15  
ttaggcttag gcggtggtgg atctggtggc ggcggatctg gtggcggtgg atccttccca 60

ac

62

&lt;210&gt; 16

&lt;211&gt; 63

&lt;212&gt; DNA

&lt;213&gt; Artificial Sequence

&lt;220&gt;

&lt;221&gt; misc\_structure

&lt;223&gt; synthetic oligonucleotide used to join DNA fragments with non-cohesive ends.

&lt;400&gt; 16

aattgttggg aaggatccac cgccaccaga tccgccgcca ccagatccac caccgcctaa 60  
gcc 63

&lt;210&gt; 17

&lt;211&gt; 1782

&lt;212&gt; DNA

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; CDS

&lt;222&gt; (1)..(1755)

&lt;400&gt; 17

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Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu  
1 5 10 15

gaa aat ttc aaa gcc ttg gtg ttg att gcc ttt gct cag tat ctt cag 96  
Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln  
20 25 30

cag tgt cca ttt gaa gat cat gta aaa tta gtg aat gaa gta act gaa 144  
Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu  
35 40 45

ttt gca aaa aca tgt gtt gct gat gag tca gct gaa aat tgt gac aaa 192  
Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys  
50 55 60

tca ctt cat acc ctt ttt gga gac aaa tta tgc aca gtt gca act ctt 240  
Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu  
65 70 75 80

cgt gaa acc tat ggt gaa atg gct gac tgc tgt gca aaa caa gaa cct 288  
Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro  
85 90 95

gag aga aat gaa tgc ttc ttg caa cac aaa gat gac aac cca aac ctc 336  
Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu  
100 105 110

ccc cga ttg gtg aga cca gag gtt gat gtg atg tgc act gct ttt cat 384  
Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His  
115 120 125

gac aat gaa gag aca ttt ttg aaa aaa tac tta tat gaa att gcc aga	432
Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg	
130 135 140	
aga cat cct tac ttt tat gcc ccg gaa ctc ctt ttc ttt gct aaa agg	480
Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg	
145 150 155 160	
tat aaa gct gct ttt aca gaa tgt tgc caa gct gct gat aaa gct gcc	528
Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala	
165 170 175	
tgc ctg ttg cca aag ctc gat gaa ctt cgg gat gaa ggg aag gct tcg	576
Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser	
180 185 190	
tct gcc aaa cag aga ctc aaa tgt gcc agt ctc caa aaa ttt gga gaa	624
Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu	
195 200 205	
aga gct ttc aaa gca tgg gca gtg gct cgc ctg agc cag aga ttt ccc	672
Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro	
210 215 220	
aaa gct gag ttt gca gaa gtt tcc aag tta gtg aca gat ctt acc aaa	720
Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys	
225 230 235 240	
gtc cac acg gaa tgc tgc cat gga gat ctg ctt gaa tgt gct gat gac	768
Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp	
245 250 255	
agg gcg gac ctt gcc aag tat atc tgt gaa aat cag gat tcg atc tcc	816
Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser	
260 265 270	
agt aaa ctg aag gaa tgc tgt gaa aaa cct ctg ttg gaa aaa tcc cac	864
Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His	
275 280 285	
tgc att gcc gaa gtg gaa aat gat gag atg cct gct gac ttg cct tca	912
Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser	
290 295 300	
tta gct gct gat ttt gtt gaa agt aag gat gtt tgc aaa aac tat gct	960
Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala	
305 310 315 320	
gag gca aag gat gtc ttc ctg ggc atg ttt ttg tat gaa tat gca aga	1008
Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg	
325 330 335	
agg cat cct gat tac tct gtc gtg ctg ctg ctg aga ctt gcc aag aca	1056
Arg His Pro Asp Tyr Ser Val Val Leu Leu Leu Arg Leu Ala Lys Thr	
340 345 350	
tat gaa acc act cta gag aag tgc tgt gcc gct gca gat cct cat gaa	1104
Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu	
355 360 365	

tgc tat gcc aaa gtg ttc gat gaa ttt aaa cct ctt gtg gaa gag cct	1152
Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro	
370 375 380	
cag aat tta atc aaa caa aac tgt gag ctt ttt gag cag ctt gga gag	1200
Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu	
385 390 395 400	
tac aaa ttc cag aat gcg cta tta gtt cgt tac acc aag aaa gta ccc	1248
Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro	
405 410 415	
caa gtg tca act cca act ctt gta gag gtc tca aga aac cta gga aaa	1296
Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys	
420 425 430	
gtg ggc agc aaa tgt tgt aaa cat cct gaa gca aaa aga atg ccc tgt	1344
Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys	
435 440 445	
gca gaa gac tat cta tcc gtg gtc ctg aac cag tta tgt gtg ttg cat	1392
Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His	
450 455 460	
gag aaa acg cca gta agt gac aga gtc aca aaa tgc tgc aca gag tcc	1440
Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser	
465 470 475 480	
ttg gtg aac agg cga cca tgc ttt tca gct ctg gaa gtc gat gaa aca	1488
Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr	
485 490 495	
tac gtt ccc aaa gag ttt aat gct gaa aca ttc acc ttc cat gca gat	1536
Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp	
500 505 510	
ata tgc aca ctt tct gag aag gag aga caa atc aag aaa caa act gca	1584
Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala	
515 520 525	
ctt gtt gag ctt gtg aaa cac aag ccc aag gca aca aaa gag caa ctg	1632
Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu	
530 535 540	
aaa gct gtt atg gat gat ttc gca gct ttt gta gag aag tgc tgc aag	1680
Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys	
545 550 555 560	
gct gac gat aag gag acc tgc ttt gcc gag gag ggt aaa aaa ctt gtt	1728
Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val	
565 570 575	
gct gca agt caa gct gcc tta ggc tta taacatctac attttaaagc atctcag	1782
Ala Ala Ser Gln Ala Ala Leu Gly Leu	
580 585	

&lt;210&gt; 18

&lt;211&gt; 585

&lt;212&gt; PRT

&lt;213&gt; Homo Sapiens

&lt;400&gt; 18

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Asp Ala His Lys Ser Glu Val Ala His Arg Phe Lys Asp Leu Gly Glu
 1              5              10              15

Glu Asn Phe Lys Ala Leu Val Leu Ile Ala Phe Ala Gln Tyr Leu Gln
      20              25              30

Gln Cys Pro Phe Glu Asp His Val Lys Leu Val Asn Glu Val Thr Glu
      35              40              45

Phe Ala Lys Thr Cys Val Ala Asp Glu Ser Ala Glu Asn Cys Asp Lys
 50              55              60

Ser Leu His Thr Leu Phe Gly Asp Lys Leu Cys Thr Val Ala Thr Leu
 65              70              75              80

Arg Glu Thr Tyr Gly Glu Met Ala Asp Cys Cys Ala Lys Gln Glu Pro
      85              90              95

Glu Arg Asn Glu Cys Phe Leu Gln His Lys Asp Asp Asn Pro Asn Leu
      100              105              110

Pro Arg Leu Val Arg Pro Glu Val Asp Val Met Cys Thr Ala Phe His
      115              120              125

Asp Asn Glu Glu Thr Phe Leu Lys Lys Tyr Leu Tyr Glu Ile Ala Arg
      130              135              140

Arg His Pro Tyr Phe Tyr Ala Pro Glu Leu Leu Phe Phe Ala Lys Arg
      145              150              155              160

Tyr Lys Ala Ala Phe Thr Glu Cys Cys Gln Ala Ala Asp Lys Ala Ala
      165              170              175

Cys Leu Leu Pro Lys Leu Asp Glu Leu Arg Asp Glu Gly Lys Ala Ser
      180              185              190

Ser Ala Lys Gln Arg Leu Lys Cys Ala Ser Leu Gln Lys Phe Gly Glu
      195              200              205

Arg Ala Phe Lys Ala Trp Ala Val Ala Arg Leu Ser Gln Arg Phe Pro
      210              215              220

Lys Ala Glu Phe Ala Glu Val Ser Lys Leu Val Thr Asp Leu Thr Lys
      225              230              235              240

Val His Thr Glu Cys Cys His Gly Asp Leu Leu Glu Cys Ala Asp Asp
      245              250              255

Arg Ala Asp Leu Ala Lys Tyr Ile Cys Glu Asn Gln Asp Ser Ile Ser
      260              265              270

Ser Lys Leu Lys Glu Cys Cys Glu Lys Pro Leu Leu Glu Lys Ser His
      275              280              285

Cys Ile Ala Glu Val Glu Asn Asp Glu Met Pro Ala Asp Leu Pro Ser
      290              295              300

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Leu Ala Ala Asp Phe Val Glu Ser Lys Asp Val Cys Lys Asn Tyr Ala  
 305 310 315 320  
 Glu Ala Lys Asp Val Phe Leu Gly Met Phe Leu Tyr Glu Tyr Ala Arg  
 325 330 335  
 Arg His Pro Asp Tyr Ser Val Val Leu Leu Arg Leu Ala Lys Thr  
 340 345 350  
 Tyr Glu Thr Thr Leu Glu Lys Cys Cys Ala Ala Ala Asp Pro His Glu  
 355 360 365  
 Cys Tyr Ala Lys Val Phe Asp Glu Phe Lys Pro Leu Val Glu Glu Pro  
 370 375 380  
 Gln Asn Leu Ile Lys Gln Asn Cys Glu Leu Phe Glu Gln Leu Gly Glu  
 385 390 395 400  
 Tyr Lys Phe Gln Asn Ala Leu Leu Val Arg Tyr Thr Lys Lys Val Pro  
 405 410 415  
 Gln Val Ser Thr Pro Thr Leu Val Glu Val Ser Arg Asn Leu Gly Lys  
 420 425 430  
 Val Gly Ser Lys Cys Cys Lys His Pro Glu Ala Lys Arg Met Pro Cys  
 435 440 445  
 Ala Glu Asp Tyr Leu Ser Val Val Leu Asn Gln Leu Cys Val Leu His  
 450 455 460  
 Glu Lys Thr Pro Val Ser Asp Arg Val Thr Lys Cys Cys Thr Glu Ser  
 465 470 475 480  
 Leu Val Asn Arg Arg Pro Cys Phe Ser Ala Leu Glu Val Asp Glu Thr  
 485 490 495  
 Tyr Val Pro Lys Glu Phe Asn Ala Glu Thr Phe Thr Phe His Ala Asp  
 500 505 510  
 Ile Cys Thr Leu Ser Glu Lys Glu Arg Gln Ile Lys Lys Gln Thr Ala  
 515 520 525  
 Leu Val Glu Leu Val Lys His Lys Pro Lys Ala Thr Lys Glu Gln Leu  
 530 535 540  
 Lys Ala Val Met Asp Asp Phe Ala Ala Phe Val Glu Lys Cys Cys Lys  
 545 550 555 560  
 Ala Asp Asp Lys Glu Thr Cys Phe Ala Glu Glu Gly Lys Lys Leu Val  
 565 570 575  
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 580 585

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site in pPPC0006

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<210> 20  
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<223> primer used in generation XhoI and ClaI  
site in pPPC0006

<400> 20  
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<210> 21  
<211> 24  
<212> DNA  
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site in pPPC0006

<400> 21  
tacaaactta agagtccaat tagc 24

<210> 22  
<211> 29  
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<220>  
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<223> primer used in generation XhoI and ClaI  
site in pPPC0006

<400> 22  
cacttctcta gagtggtttc atatgtctt 29

<210> 23  
<211> 60  
<212> DNA  
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<220>  
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<223> Synthetic oligonucleotide used to alter restriction



sites in pPPC0007

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<210> 24  
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<220>  
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sites in pPPC0007

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<210> 25  
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of the Therapeutic Protein

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32

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<220>  
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51

<210> 27  
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33

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<210> 29  
 <211> 24  
 <212> PRT  
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 <221> signal  
 <223> signal peptide of natural human serum albumin protein

<400> 29  
 Met Lys Trp Val Ser Phe Ile Ser Leu Leu Phe Leu Phe Ser Ser Ala  
           1                  5                  10                  15  
 Tyr Ser Arg Ser Leu Asp Lys Arg  
                   20

<210> 30  
 <211> 114  
 <212> DNA  
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<220>  
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 albumin fusion VECTOR

<220>  
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 <222> (5)..(10)  
 <223> BamHI restriction site

<220>  
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 <222> (17)..(27)  
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<220>
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<223> cds natural signal sequence of human serum albumin

<220>
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<223> XhoI restriction site

<220>
<221> misc_feature
<222> (98)..(114)
<223> cds first six amino acids of human serum albumin

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tcagggatcc aagcttccgc caccatgaag tgggtaacct ttatttccct tctttttctc 60

tttagctcgg cttactcgag ggggtgtgtt cgctcgagatg caacacaagag tgag      114

<210> 31
<211> 43
<212> DNA
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<220>
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<223> reverse primer useful for generation of
PC4:HSA albumin fusion VECTOR

<220>
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<222> (6)..(11)
<223> Asp718 restriction site

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<222> (12)..(17)
<223> EcoRI restriction site

<220>
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<222> (15)..(17)
<223> reverse complement of stop codon

<220>
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<222> (18)..(25)
<223> AscI restriction site

<220>
<221> misc_feature
<222> (18)..(43)
<223> reverse complement of DNA sequence encoding last 9 amino acids

<400> 31
gcagcgggtac cgaattcggc ggcgccttata agcctaaggc agc      43

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<210> 32  
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<212> DNA  
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<220>  
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<210> 33  
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<223> reverse primer useful for inserting Therapeutic protein into pC4:HSA vector

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46

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<210> 34  
<211> 17  
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1 5 10 15

Ala

<210> 35  
<211> 22  
<212> PRT  
<213> Artificial Sequence

<220>  
<221> signal  
<223> Synthetic signal peptide

<400> 35  
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1 5 10 15

Trp Ala Pro Ala Arg Gly  
20

<210> 36  
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amplifying human VH domains

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<210> 37  
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<212> DNA  
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amplifying human VH domains

<400> 37  
caggtcaact taagggagtc tgg 23

<210> 38  
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amplifying human VH domains

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gaggtgcagc tgggtggagtc tgg 23

<210> 39  
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<210> 41

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

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<210> 42

<211> 24

<212> DNA

<213> Artificial Sequence

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<221>primer\_bind

<223>Degenerate JH reverse primer useful for  
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<400> 42

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<210> 43

<211> 24

<212> DNA

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<223>Degenerate JH reverse primer useful for  
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24

<210> 44

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate JH reverse primer useful for  
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<400> 44  
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<210> 45  
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<210> 46  
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<220>  
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amplifying human VL domains

<400> 46  
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<210> 47  
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<220>  
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<210> 48  
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<400> 48  
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<210> 49  
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amplifying human VL domains

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<210> 50  
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amplifying human VL domains

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<210> 51  
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amplifying human VL domains

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gaaattgtgc tgactcagtc tcc 23

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amplifying human VL domains

<400> 53  
cagtctgtgt tgacgcagcc gcc 23



<210> 54  
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<212> DNA  
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amplifying human VL domains

<400> 54  
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<210> 55  
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amplifying human VL domains

<400> 55  
tcctatgtgc tgactcagcc acc 23

<210> 56  
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<400> 56  
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<210> 57  
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<212> DNA  
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<220>  
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amplifying human VL domains

<400> 57  
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<210> 58  
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amplifying human VL domains

<400> 58  
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<210> 59  
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amplifying human VL domains

<400> 59  
aattttatgc tgactcagcc cca 23

<210> 60  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Jkappa reverse primer useful for  
amplifying human VL domains

<400> 60  
acgtttgatt tccaccttgg tccc 24

<210> 61  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Jkappa reverse primer useful for  
amplifying human VL domains

<400> 61  
acgtttgatc tccagcttgg tccc 24

<210> 62  
<211> 24  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Jkappa reverse primer useful for  
amplifying human VL domains

<400> 62  
acgtttgata tccactttgg tccc 24

<210> 63  
<211> 24  
<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Jkappa reverse primer useful for  
amplifying human VL domains

<400> 63

acgtttgatc tccaccttgg tccc

24

<210> 64

<211> 24

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Jkappa reverse primer useful for  
amplifying human VL domains

<400> 64

acgtttaatc tccagtcgtg tccc

24

<210> 65

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Jlambda reverse primer useful for  
amplifying human VL domains

<400> 65

cagtctgtgt tgacgcagcc gcc

23

<210> 66

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Jlambda reverse primer useful for  
amplifying human VL domains

<400> 66

cagtctgccc tgactcagcc tgc

23

<210> 67

<211> 23

<212> DNA

<213> Artificial Sequence

<220>

<221>primer\_bind

<223>Degenerate Jlambda reverse primer useful for  
amplifying human VL domains

<400> 67

tcctatgtgc tgactcagcc acc 23

<210> 68  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Jlambda reverse primer useful for  
amplifying human VL domains

<400> 68  
tcttctgagc tgactcagga ccc 23

<210> 69  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Jlambda reverse primer useful for  
amplifying human VL domains

<400> 69  
cacgttatac tgactcaacc gcc 23

<210> 70  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Jlambda reverse primer useful for  
amplifying human VL domains

<400> 70  
caggctgtgc tcactcagcc gtc 23

<210> 71  
<211> 23  
<212> DNA  
<213> Artificial Sequence

<220>  
<221>primer\_bind  
<223>Degenerate Jlambda reverse primer useful for  
amplifying human VL domains

<400> 71  
aatattatgc tgactcagcc cca 23

<210> 72  
<211> 15  
<212> PRT  
<213> Artificial Sequence

<220>

<221>turn

<223>Linker peptide that may be used to join VH and VL domains in an scFv.

<400> 72

Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser Gly Gly Gly Gly Ser  
1 5 10 15

<210> 73

<211> 101

<212> PRT

<213> Homo sapiens

<400> 73

Pro Ala Leu Phe Ile Cys Val Ile Ile Phe Val Asn Ile Val Phe Ser  
1 5 10 15

Val Val Ala Thr Ser Ser Pro Pro Ala Ser Gly Ser Val Cys Leu Pro  
20 25 30

Gly Leu Leu Ala Pro His Trp Ala Ala Pro Gly Ser Leu Pro Leu Ile  
35 40 45

Pro Gly Leu Ala Val Arg Pro Ser Gln Gln Gly Pro Val Thr Gln Gln  
50 55 60

Pro Ala Gln Ser Ile Cys Phe Trp Gly Met Gly Trp Gly Leu Leu His  
65 70 75 80

Arg Arg Phe Glu Pro Ser Thr Leu Gly Lys Gly Thr Leu His Asp Thr  
85 90 95

Pro Leu Pro Pro Ser  
100

<210> 74

<211> 58

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (24)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 74

Arg Pro Ser Leu Pro Lys Cys Ala Ala Leu Val His Val Pro Asn Gly  
1 5 10 15

Pro Ser Pro His Ala Pro Pro Xaa Ser Gly Val Gly Ala Pro Ser Glu  
20 25 30

Val Ser Glu Ser Leu Lys Cys Ser Phe Val Arg Pro Leu Cys Ser Asp  
35 40 45

Ser Pro Gly Gln Ala Thr Ser Asn Pro Leu

50

55

<210> 75  
 <211> 119  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 75

Asp Leu Asp Leu Met Glu Ser Gly Val Ser Thr His Asn Met Ser Ser  
 1 5 10 15  
 Trp Thr Leu Gly Ile His Cys Glu Gln Ala Gly Trp Gly Leu Pro Ala  
 20 25 30  
 Gln Ile Gly Ala Ile Leu Phe Cys Ile Leu Phe Gln Gly Val Leu Asn  
 35 40 45  
 Thr Leu Lys Gln Val Glu Ala Pro Ala Pro Asp Trp Glu Leu Leu Glu  
 50 55 60  
 Arg Pro Pro Cys Val Cys Val Val Leu Ser Trp Ser His Ile Glu Ser  
 65 70 75 80  
 Gly Trp Gly Ser Ser Thr Arg Gln Ser Pro Ser Asn Ser Gln Val Leu  
 85 90 95  
 Ala Pro Ser Gly Lys Ala Asp Thr Leu Ser Trp Arg Arg Pro Arg Lys  
 100 105 110  
 Ser Gly Leu Arg Val Ala Ala  
 115

<210> 76  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (5)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 76

Val Thr Cys Gln Xaa Val Leu Pro Ser Pro Val Tyr Leu Cys Asn Tyr  
 1 5 10 15  
 Phe Cys Lys His Cys Ile Leu Cys Gly Arg His Leu Leu Ala Pro Ser  
 20 25 30  
 Leu Gly Phe Ser Leu Ser Ser Arg Pro Ala Cys Thr Ser Leu Gly Cys  
 35 40 45  
 Ser Gly Val Ser Ala Pro His Ser Arg Pro Gly Cys Gln Ala Gln Pro  
 50 55 60  
 Ala Gly Ala Arg Asp Pro Ala Ala Cys Pro Lys His Leu Phe Leu Gly

65

70

75

80

Asp Gly Val Gly Ala Ala Pro Gln Glu Val  
                             85                            90

&lt;210&gt; 77

&lt;211&gt; 70

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (29)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (34)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (37)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 77

Met Asp Pro Ala Ala Val Ala Leu Leu Ala Leu Ser Leu Pro Cys Ala  
   1                            5                            10                            15

Leu Val Gly Val Gln Trp Glu Gln Ala Pro Trp Gly Xaa Trp Arg Leu  
                             20                            25                            30

Ser Xaa Ser Ala Xaa Thr Pro Glu Thr Pro Ser Trp Arg Leu Cys Pro  
                             35                            40                            45

Leu Arg Asp Tyr Pro Lys Pro Gly Gln Arg Ser Gly Gly Asp Arg Gly  
                             50                            55                            60

Ser His Ile Arg Ser Leu  
   65                            70

&lt;210&gt; 78

&lt;211&gt; 194

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (3)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (17)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (33)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 78

Gln Trp Xaa Gly Gln Gly Ser Leu Cys Pro Trp Tyr Cys Cys Pro Gly  
 1 5 10 15

Xaa Val Ser Ala Val Thr Leu Leu Pro Ser Trp Trp Leu Leu Arg Pro  
 20 25 30

Xaa Phe Val Leu Leu Phe Leu Pro Lys Cys Leu Ser Ser Pro Ser Cys  
 35 40 45

Ile Lys Tyr Pro Cys Cys Ala Thr Asn Tyr Leu Glu Leu Gly Asp Phe  
 50 55 60

Thr Thr Thr Ala Cys Gln Arg Pro Ala Val Asp Glu Gly Leu Gly Gly  
 65 70 75 80

Met Ala Gly Pro Ala Gln Gly Ser Leu Ala Glu Val Gly Ala Glu Ala  
 85 90 95

Ala Arg His Trp Arg Leu Gly Leu Ser His Thr Pro Trp Leu Leu Gly  
 100 105 110

Gly Cys Ile Leu Leu Ser Ser Leu Ser Ser Arg Gly Cys Thr Leu Gly  
 115 120 125

Cys Arg Pro Pro Val Ser Leu Thr Gly Tyr Ser Trp Gly Ser Leu Arg  
 130 135 140

Ser Trp Arg Cys Pro Gln Pro Pro Ser Pro Arg Leu Pro Pro Pro His  
 145 150 155 160

Thr Leu Arg Pro Gln Arg Phe Val Arg Val His Glu Ile Leu Glu Leu  
 165 170 175

Pro Gly Cys Ser Phe Cys Asn Ile Phe Asn Ile Cys Asn Pro Val Lys  
 180 185 190

Tyr Gln

&lt;210&gt; 79

&lt;211&gt; 103

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 79

Met Asp Pro Ala Ala Val Ala Leu Leu Ala Leu Ser Leu Pro Cys Ala  
 1 5 10 15

Leu Val Gly Val Gln Trp Glu Gln Ala Pro Trp Gly Pro Trp Arg Leu  
 20 25 30

Ser Leu Leu Ser Pro His Pro Arg Asp Pro Ile Val Ala Pro Val Ser



35                                      40                                      45  
 Thr Gln Gly Leu Ser Gln Ala Trp Pro Glu Val Gly Arg Gly Gln Arg  
     50                                      55                                      60  
 Glu Pro His Arg Ser Leu Tyr Gln Pro Leu Ser Tyr His Arg Val Gly  
     65                                      70                                      75                                      80  
 Ala Leu Pro Ser His Arg Val Ser Gly Leu Trp Ala Pro Pro Ser Cys  
                                     85                                      90                                      95  
 Thr Gly Pro Arg Gly His Phe  
                                     100

&lt;210&gt; 80

&lt;211&gt; 477

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 80

Met Ala Ala Pro Thr Pro Ala Arg Pro Val Leu Thr His Leu Leu Val  
     1                                      5                                      10                                      15  
 Ala Leu Phe Gly Met Gly Ser Trp Ala Ala Val Asn Gly Ile Trp Val  
                                     20                                      25                                      30  
 Glu Leu Pro Val Val Val Lys Glu Leu Pro Glu Gly Trp Ser Leu Pro  
                                     35                                      40                                      45  
 Ser Tyr Val Ser Val Leu Val Ala Leu Gly Asn Leu Gly Leu Leu Val  
                                     50                                      55                                      60  
 Val Thr Leu Trp Arg Arg Leu Ala Pro Gly Lys Asp Glu Gln Val Pro  
     65                                      70                                      75                                      80  
 Ile Arg Val Val Gln Val Leu Gly Met Val Gly Thr Ala Leu Leu Ala  
                                     85                                      90                                      95  
 Ser Leu Trp His His Val Ala Pro Val Ala Gly Gln Leu His Ser Val  
                                     100                                      105                                      110  
 Ala Phe Leu Ala Leu Ala Phe Val Leu Ala Leu Ala Cys Cys Ala Ser  
                                     115                                      120                                      125  
 Asn Val Thr Phe Leu Pro Phe Leu Ser His Leu Pro Pro Arg Phe Leu  
     130                                      135                                      140  
 Arg Ser Phe Phe Leu Gly Gln Gly Leu Ser Ala Leu Leu Pro Cys Val  
     145                                      150                                      155                                      160  
 Leu Ala Leu Val Gln Gly Val Gly Arg Leu Glu Cys Pro Pro Ala Pro  
                                     165                                      170                                      175  
 Ile Asn Gly Thr Pro Gly Pro Pro Leu Asp Phe Leu Glu Arg Phe Pro  
                                     180                                      185                                      190  
 Ala Ser Thr Phe Phe Trp Ala Leu Thr Ala Leu Leu Val Ala Ser Ala  
                                     195                                      200                                      205

Ala Ala Phe Gln Gly Leu Leu Leu Leu Leu Pro Pro Pro Pro Ser Val  
 210 215 220  
 Pro Thr Gly Glu Leu Gly Ser Gly Leu Gln Val Gly Ala Pro Gly Ala  
 225 230 235 240  
 Glu Glu Glu Val Glu Glu Ser Ser Pro Leu Gln Glu Pro Pro Ser Gln  
 245 250 255  
 Ala Ala Gly Thr Thr Pro Gly Pro Asp Pro Lys Ala Tyr Gln Leu Leu  
 260 265 270  
 Ser Ala Arg Ser Ala Cys Leu Leu Gly Leu Leu Ala Ala Thr Asn Ala  
 275 280 285  
 Leu Thr Asn Gly Val Leu Pro Ala Val Gln Ser Phe Ser Cys Leu Pro  
 290 295 300  
 Tyr Gly Arg Leu Ala Tyr His Leu Ala Val Val Leu Gly Ser Ala Ala  
 305 310 315 320  
 Asn Pro Leu Ala Cys Phe Leu Ala Met Gly Val Leu Cys Arg Tyr Thr  
 325 330 335  
 Arg Thr Pro Ser Pro Cys Ala Gly Gly Thr Gln Gly Trp Glu Pro Gly  
 340 345 350  
 Pro Gly Ala Val Ser Pro Asp Ile Leu Leu Ala His Cys Arg Ser Leu  
 355 360 365  
 Ala Gly Leu Gly Gly Leu Ser Leu Leu Gly Val Phe Cys Gly Gly Tyr  
 370 375 380  
 Leu Met Ala Leu Ala Val Leu Ser Pro Cys Pro Pro Leu Val Gly Thr  
 385 390 395 400  
 Ser Ala Gly Val Val Leu Val Val Leu Ser Trp Val Leu Cys Leu Gly  
 405 410 415  
 Val Phe Ser Tyr Val Lys Val Ala Ala Ser Ser Leu Leu His Gly Gly  
 420 425 430  
 Gly Arg Pro Ala Leu Leu Ala Ala Gly Val Ala Ile Gln Val Gly Ser  
 435 440 445  
 Leu Leu Gly Ala Val Ala Met Phe Pro Pro Thr Ser Ile Tyr His Val  
 450 455 460  
 Phe His Ser Arg Lys Asp Cys Ala Asp Pro Cys Asp Ser  
 465 470 475

&lt;210&gt; 81

&lt;211&gt; 445

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 81

Met Ala Ala Pro Thr Pro Ala Arg Pro Val Leu Thr His Leu Leu Val  
 1 5 10 15  
 Ala Leu Phe Gly Met Gly Ser Trp Ala Ala Val Asn Gly Ile Trp Val  
 20 25 30  
 Glu Leu Pro Val Val Val Lys Glu Leu Pro Glu Gly Trp Ser Leu Pro  
 35 40 45  
 Ser Tyr Val Ser Val Leu Val Ala Leu Gly Asn Leu Gly Leu Leu Val  
 50 55 60  
 Val Thr Leu Trp Arg Arg Leu Ala Pro Gly Lys Asp Glu Gln Val Pro  
 65 70 75 80  
 Ile Arg Val Val Gln Val Leu Gly Met Val Gly Thr Ala Leu Leu Ala  
 85 90 95  
 Ser Leu Trp His His Val Ala Pro Val Ala Gly Gln Leu His Ser Val  
 100 105 110  
 Ala Phe Leu Ala Leu Ala Phe Val Leu Ala Leu Ala Cys Cys Ala Pro  
 115 120 125  
 Asn Val Thr Phe Leu Pro Phe Leu Ser His Leu Pro Pro Arg Phe Leu  
 130 135 140  
 Arg Ser Phe Phe Leu Gly Gln Gly Leu Ser Ala Leu Leu Pro Cys Val  
 145 150 155 160  
 Leu Ala Leu Val Gln Gly Val Gly Arg Leu Glu Cys Pro Pro Ala Pro  
 165 170 175  
 Ile Asn Gly Thr Pro Gly Pro Pro Leu Asp Phe Leu Glu Arg Phe Pro  
 180 185 190  
 Ala Ser Thr Phe Phe Trp Ala Leu Thr Ala Leu Leu Val Ala Ser Ala  
 195 200 205  
 Ala Ala Phe Gln Gly Leu Leu Leu Leu Leu Pro Pro Pro Pro Ser Val  
 210 215 220  
 Pro Thr Gly Glu Leu Gly Ser Gly Leu Gln Val Gly Ala Pro Gly Ala  
 225 230 235 240  
 Glu Glu Glu Val Glu Glu Ser Ser Pro Leu Gln Glu Pro Pro Ser Gln  
 245 250 255  
 Ala Ala Gly Thr Thr Pro Gly Pro Asp Pro Lys Ala Tyr Gln Leu Leu  
 260 265 270  
 Ser Ala Arg Ser Ala Cys Leu Leu Gly Leu Leu Ala Ala Thr Asn Ala  
 275 280 285  
 Leu Thr Asn Gly Val Leu Pro Ala Val Gln Ser Phe Ser Cys Leu Pro  
 290 295 300  
 Tyr Gly Arg Leu Ala Tyr His Leu Ala Val Val Leu Gly Ser Ala Ala  
 305 310 315 320

Asn Pro Leu Ala Cys Phe Leu Ala Met Gly Val Leu Cys Arg Ser Leu  
 325 330 335  
 Ala Gly Leu Gly Gly Leu Ser Leu Leu Gly Val Phe Cys Gly Gly Tyr  
 340 345 350  
 Leu Met Ala Leu Ala Val Leu Ser Pro Cys Pro Pro Leu Val Gly Thr  
 355 360 365  
 Ser Ala Gly Val Val Leu Val Val Leu Ser Trp Val Leu Cys Leu Gly  
 370 375 380  
 Val Phe Ser Tyr Val Lys Val Ala Ala Ser Ser Leu Leu His Gly Gly  
 385 390 395 400  
 Gly Arg Pro Ala Leu Leu Ala Ala Gly Val Ala Ile Gln Val Gly Ser  
 405 410 415  
 Leu Leu Gly Ala Val Ala Met Phe Pro Pro Thr Ser Ile Tyr His Val  
 420 425 430  
 Phe His Ser Arg Lys Asp Cys Ala Asp Pro Cys Asp Ser  
 435 440 445

&lt;210&gt; 82

&lt;211&gt; 264

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (196)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (224)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (233)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 82

Met Leu Arg Leu Phe Glu Thr Phe Leu Glu Thr Ala Pro Gln Leu Thr  
 1 5 10 15

Leu Val Leu Ala Ile Met Leu Gln Ser Gly Arg Ala Glu Tyr Tyr Gln  
 20 25 30

Trp Val Gly Ile Cys Thr Ser Phe Leu Gly Ile Ser Trp Ala Leu Leu  
 35 40 45

Asp Tyr His Arg Ala Leu Arg Thr Cys Leu Pro Ser Lys Pro Leu Leu  
 50 55 60

Gly Leu Gly Ser Ser Val Ile Tyr Phe Leu Trp Asn Leu Leu Leu Leu

65		70		75		80									
Trp	Pro	Arg	Val	Leu	Ala	Val	Ala	Leu	Phe	Ser	Ala	Leu	Phe	Pro	Ser
				85					90					95	
Tyr	Val	Ala	Leu	His	Phe	Leu	Gly	Leu	Trp	Leu	Val	Leu	Leu	Leu	Trp
			100					105					110		
Val	Trp	Leu	Gln	Gly	Thr	Asp	Phe	Met	Pro	Asp	Pro	Ser	Ser	Glu	Trp
			115				120					125			
Leu	Tyr	Arg	Val	Thr	Val	Ala	Thr	Ile	Leu	Tyr	Phe	Ser	Trp	Phe	Asn
			130			135					140				
Val	Ala	Glu	Gly	Arg	Thr	Arg	Gly	Arg	Ala	Ile	Ile	His	Phe	Ala	Phe
145					150				155						160
Leu	Leu	Ser	Asp	Ser	Ile	Leu	Leu	Val	Ala	Thr	Trp	Val	Thr	His	Ser
				165					170					175	
Ser	Trp	Leu	Pro	Ser	Gly	Ile	Pro	Leu	Gln	Leu	Trp	Leu	Pro	Val	Gly
			180					185					190		
Cys	Gly	Cys	Xaa	Phe	Leu	Gly	Leu	Ala	Leu	Arg	Leu	Val	Tyr	Tyr	His
			195				200					205			
Trp	Leu	His	Pro	Ser	Cys	Cys	Trp	Lys	Pro	Asp	Pro	Asp	Gln	Val	Xaa
	210					215					220				
Gly	Ala	Arg	Ser	Leu	Leu	Ser	Pro	Xaa	Gly	Tyr	Gln	Leu	Pro	Gln	Asn
225					230					235					240
Arg	Arg	Met	Thr	His	Leu	Ala	Gln	Lys	Phe	Phe	Pro	Lys	Ala	Lys	Asp
				245					250					255	
Glu	Ala	Ala	Ser	Pro	Val	Lys	Gly								
			260												

&lt;210&gt; 83

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (60)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (73)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (75)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (82)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 83

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Leu Pro Tyr Pro Gly Leu Gly Gly His Arg Gly Cys Pro Leu Glu Phe
 1           5           10           15
Phe Leu Pro Ser Pro Thr Pro Phe Ile Gln Phe Met Lys Gln Ile Phe
          20           25           30
Ala Lys Ser Ser Leu Cys Ala Arg Asn Ile Ile Leu Ser Leu Gln Pro
          35           40           45
Gly Thr Arg Pro Ala Thr Ser Leu Ala Ser Ser Xaa Thr Cys Thr Asn
 50           55           60
Gln Ser Arg Val Arg Ser Gln Met Xaa Glu Xaa Arg Asp Ala Gln Leu
 65           70           75           80
Trp Xaa Ala Pro Val Arg Thr Ser Gly Ile Ser Val Lys Leu Ala Trp
          85           90           95
Pro Leu Leu Leu Leu Ser Arg Gly Cys Phe Ser Thr Lys Ser Leu Val
          100          105          110
Ser Leu Val
          115

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&lt;210&gt; 84

&lt;211&gt; 264

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 84

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Met Leu Arg Leu Phe Glu Thr Phe Leu Glu Thr Ala Pro Gln Leu Thr
 1           5           10           15
Leu Val Leu Ala Ile Met Leu Gln Ser Gly Arg Ala Glu Tyr Tyr Gln
          20           25           30
Trp Val Gly Ile Cys Thr Ser Phe Leu Gly Ile Ser Trp Ala Leu Leu
          35           40           45
Asp Tyr His Arg Ala Leu Arg Thr Cys Leu Pro Ser Lys Pro Leu Leu
          50           55           60
Gly Leu Gly Ser Ser Val Ile Tyr Phe Leu Trp Asn Leu Leu Leu Leu
 65           70           75           80
Trp Pro Arg Val Leu Ala Val Ala Leu Phe Ser Ala Leu Phe Pro Ser
          85           90           95
Tyr Val Ala Leu His Phe Leu Gly Leu Trp Leu Val Leu Leu Leu Trp
          100          105          110
Val Trp Leu Gln Gly Thr Asp Phe Met Pro Asp Pro Ser Ser Glu Trp

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115	120	125
Leu Tyr Arg Val Thr Val	Ala Thr Ile Leu Tyr Phe Ser Trp Phe Asn	
130	135	140
Val Ala Glu Gly Arg Thr Arg Gly Arg Ala Ile Ile His Phe Ala Phe		
145	150	155
160		
Leu Leu Ser Asp Ser Ile Leu Leu Val Ala Thr Trp Val Thr His Ser		
165	170	175
Ser Trp Leu Pro Ser Gly Ile Pro Leu Gln Leu Trp Leu Pro Val Gly		
180	185	190
Cys Gly Cys Phe Phe Leu Gly Leu Ala Leu Arg Leu Val Tyr Tyr His		
195	200	205
Trp Leu His Pro Ser Cys Cys Trp Lys Pro Asp Pro Asp Gln Val Asp		
210	215	220
Gly Ala Arg Ser Leu Leu Ser Pro Glu Gly Tyr Gln Leu Pro Gln Asn		
225	230	235
240		
Arg Arg Met Thr His Leu Ala Gln Lys Phe Phe Pro Lys Ala Lys Asp		
245	250	255
Glu Ala Ala Ser Pro Val Lys Gly		
260		

&lt;210&gt; 85

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 85

Met Asn Val Phe Leu Ser Leu Pro Leu Gly Ser Ser Leu Pro Pro Leu
1 5 10 15

Leu Phe Pro Pro Ser Leu Pro Ser Leu Phe Phe Pro Leu Pro Leu Tyr
20 25 30

Leu Ser Phe Ser Ala Pro Ser Pro Ala Thr Thr Pro Gly Phe Ile Ser
35 40 45

Leu Pro Gly His Ile Pro Ser Ser Ser
50 55

&lt;210&gt; 86

&lt;211&gt; 49

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (26)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 86

Cys His Pro Gln Gln Pro Ser Cys Arg Ile Pro Leu Phe Val Leu Phe  
 1 5 10 15

Ile Ser Gln Thr Ser Gln His Leu Gly Xaa Ile Glu Gly Ala Tyr Val  
 20 25 30

Glu Ile Leu Gly Ala Gly Ser Pro Asn Thr Ser Glu Thr Ile Pro Asn  
 35 40 45

Asn

&lt;210&gt; 87

&lt;211&gt; 52

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (50)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 87

Lys Glu Pro Thr Leu Lys Tyr Trp Gly Arg Val Pro Pro Ile Leu Leu  
 1 5 10 15

Lys Leu Phe Gln Thr Ile Glu Lys Glu Gly His Leu Pro Asn Ser Phe  
 20 25 30

Tyr Glu Ala Ser Ile Ile Leu Ile Leu Lys Pro Gly Arg Asp Thr Ala  
 35 40 45

Lys Xaa Lys Lys  
 50

&lt;210&gt; 88

&lt;211&gt; 155

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 88

Met Phe Phe Phe Leu Phe Pro Trp Val Leu Leu Ser Leu Pro Ser Ser  
 1 5 10 15

Ser Leu Pro Leu Ser Leu Leu Tyr Ser Ser Leu Ser Leu Ser Ile Cys  
 20 25 30

Pro Ser Leu Leu Gln Val Leu Pro Gln Pro Gln Asp Ser Ser Ala Ser  
 35 40 45

Leu Asp Thr Ser His Pro Ala Pro Asp Arg Ser Pro Pro Ser Leu Leu  
 50 55 60

Ile Leu Arg Ala Leu Ser Ser Ile Cys Leu Ser Pro Cys Gln Arg Pro



65		70		75		80									
Cys	Cys	Ala	Pro	Gly	Gly	Ala	Thr	His	Leu	Pro	Gly	Asn	Ser	Thr	Phe
				85					90					95	
Ser	His	Ala	Pro	Asp	Cys	Ser	Leu	His	Ser	Ser	Arg	Leu	Ala	Gln	Ser
			100					105					110		
Pro	Val	Thr	His	Cys	Ser	Ser	Gly	Ser	Leu	Gly	Leu	Ser	Ala	His	Gly
			115				120					125			
His	Leu	His	Ala	His	Pro	Ser	Ile	Ser	Val	Ser	Pro	His	Leu	Ser	Leu
	130					135					140				
Ser	Ile	Ser	Asn	Pro	Cys	Ser	Ser	Thr	Lys	His					
145					150					155					

&lt;210&gt; 89

&lt;211&gt; 91

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (41)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 89

Val	Trp	Arg	Arg	Cys	Val	Ser	Trp	Arg	Ser	Ile	Arg	Ala	Gln	Val	Thr
1				5					10					15	

Phe	Pro	Glu	Asp	Phe	Leu	Ser	Leu	Ser	Ser	Val	Gln	Phe	Gln	Val	
			20					25					30		

Ile	His	Val	Leu	Leu	Asp	Pro	Gly	Xaa	Thr	Gly	Ile	Ser	Thr	Asp	Leu
			35				40					45			

Leu	Ala	Ser	Phe	Gly	Leu	Glu	Tyr	His	Ser	Trp	Leu	Gly	Ala	Glu	Ala
	50					55					60				

Ala	Gly	Leu	Ile	Val	Ile	Tyr	His	Lys	Val	Ala	Arg	Lys	Leu	Pro	Arg
65					70					75					80

Gly	Val	Arg	Lys	Ala	Ala	Gly	Gly	Gly	Arg	Val					
				85					90						

&lt;210&gt; 90

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 90

Asp	Leu	His	Ile	Lys	Leu	Leu	Glu	His	Tyr	Cys	Leu	Thr	Ser	Cys	Lys
1				5					10					15	

Lys Val Leu Gln Leu

20

<210> 91  
 <211> 67  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (13)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 91  
 Pro Gln Ser Pro Gln Arg Gly Cys Tyr Ser Met Leu Xaa Val Leu Ser  
 1 5 10 15  
 Val Ser His Pro Gln Pro Asn Lys Trp Arg Cys Val Val Pro Arg Gly  
 20 25 30  
 Pro Phe Ser His Cys Leu Ala Ser Arg Arg Gly Val Leu Gln Gly Tyr  
 35 40 45  
 Ser Phe Val Cys Thr Cys Arg Leu Val Gly Pro Glu Phe Phe Ser His  
 50 55 60  
 Val Gln Glu  
 65

<210> 92  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<400> 92  
 Asp Leu His Ile Lys Leu Leu Glu His Tyr Cys Leu Thr Ser Cys Lys  
 1 5 10 15  
 Lys Val Leu Gln Leu  
 20

<210> 93  
 <211> 67  
 <212> PRT  
 <213> Homo sapiens

<400> 93  
 Asp Gly Ala Pro Gly Pro Arg Val Gly His Gly His Pro Gly Trp Leu  
 1 5 10 15  
 Gly Arg Arg Arg Gln Ala Leu His Val Leu Gln Leu Gly Met Trp Val  
 20 25 30  
 Arg Glu Gly Ile Trp Phe Cys Tyr Leu Ala Val Val Phe Ser His Pro  
 35 40 45

Ser Phe Leu Thr Ile Lys Ser His Leu Gly Leu Glu Lys Lys Lys Lys  
 50 55 60

Lys Thr Arg  
 65

<210> 94  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

<400> 94  
 Met Leu Ser Ser Ile Leu Ser Gln Leu Met Val Ser Lys Pro Trp Gly  
 1 5 10 15

Val Phe Ile Ser Phe Ser Phe Ile Ser Leu Ser Phe Tyr His Ala Ile  
 20 25 30

Ser Ile Ser Ser Val Pro Ser Gly Arg Gln Val Val  
 35 40

<210> 95  
 <211> 150  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (12)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (38)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (43)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (145)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 95  
 Cys Pro Pro Pro Pro Lys Arg Gly Gly Ile Glu Xaa Glu Leu Gly Lys  
 1 5 10 15

Leu Trp Pro Thr Phe Glu Thr Phe Arg Ala Asn Arg Arg Thr Met Leu  
 20 25 30

Leu Glu Pro Leu Gly Xaa Pro Gly Gly Gly Xaa Arg Pro Phe Trp Lys  
 35 40 45

Arg Ala Arg Gly Val Thr Ser Glu Ala Ile Val Thr Gly Arg Cys Asn  
           50                          55                          60  
 His Cys Pro Asp Cys Gly Lys Ala Trp Arg Glu Gln Gly Glu Ser Thr  
       65                          70                          75                          80  
 Pro Ser Thr Cys Pro Phe Asp Pro Leu Thr Cys Trp Trp Leu Ala Leu  
                           85                          90                          95  
 Ala Lys Pro Glu Thr Gly Gly Gln Glu Pro Leu Ser Val Ala Ala Tyr  
                           100                          105                          110  
 Gly Gly Gln Pro Ser Glu Val Lys Ala Gly Gln Lys Val Glu Lys Gly  
           115                          120                          125  
 Leu Gly Gly Thr His Gly Glu Gln Ser Thr Lys Phe Thr Pro Phe Val  
       130                          135                          140  
 Xaa Trp His Trp Lys Ile  
   145                          150

<210> 96  
 <211> 35  
 <212> PRT  
 <213> Homo sapiens

<400> 96  
 Met Val Ser Lys Pro Trp Gly Val Phe Ile Ser Phe Ser Phe Ile Ser  
       1                          5                          10                          15  
 Leu Ser Phe Tyr His Ala Ile Ser Ile Ser Ser Val Pro Ser Gly Arg  
                           20                          25                          30  
 Gln Val Val  
           35

<210> 97  
 <211> 13  
 <212> PRT  
 <213> Homo sapiens

<400> 97  
 Met Lys Ser Leu His Gly Arg Leu Leu Trp Gln Ser Ala  
       1                          5                          10

<210> 98  
 <211> 13  
 <212> PRT  
 <213> Homo sapiens

<400> 98  
 Met Lys Ser Leu His Gly Arg Leu Leu Trp Gln Ser Ala  
       1                          5                          10

<210> 99  
 <211> 353  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (260)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 99

Met	Pro	Trp	Pro	Leu	Leu	Leu	Leu	Leu	Ala	Val	Ser	Gly	Ala	Gln	Thr
1				5					10					15	
Thr	Arg	Pro	Cys	Phe	Pro	Gly	Cys	Gln	Cys	Glu	Val	Glu	Thr	Phe	Gly
			20					25					30		
Leu	Phe	Asp	Ser	Phe	Ser	Leu	Thr	Arg	Val	Asp	Cys	Ser	Gly	Leu	Gly
		35					40					45			
Pro	His	Ile	Met	Pro	Val	Pro	Ile	Pro	Leu	Asp	Thr	Ala	His	Leu	Asp
	50						55				60				
Leu	Ser	Ser	Asn	Arg	Leu	Glu	Met	Val	Asn	Glu	Ser	Val	Leu	Ala	Gly
65					70					75					80
Pro	Gly	Tyr	Thr	Thr	Leu	Ala	Gly	Leu	Asp	Leu	Ser	His	Asn	Leu	Leu
				85					90					95	
Thr	Ser	Ile	Ser	Pro	Thr	Ala	Phe	Ser	Arg	Leu	Arg	Tyr	Leu	Glu	Ser
			100						105				110		
Leu	Asp	Leu	Ser	His	Asn	Gly	Leu	Thr	Ala	Leu	Pro	Ala	Glu	Ser	Phe
		115					120					125			
Thr	Ser	Ser	Pro	Leu	Ser	Asp	Val	Asn	Leu	Ser	His	Asn	Gln	Leu	Arg
	130					135					140				
Glu	Val	Ser	Val	Ser	Ala	Phe	Thr	Thr	His	Ser	Gln	Gly	Arg	Ala	Leu
145					150					155					160
His	Val	Asp	Leu	Ser	His	Asn	Leu	Ile	His	Arg	Leu	Val	Pro	His	Pro
				165					170					175	
Thr	Arg	Ala	Gly	Leu	Pro	Ala	Pro	Thr	Ile	Gln	Ser	Leu	Asn	Leu	Ala
			180					185					190		
Trp	Asn	Arg	Leu	His	Ala	Val	Pro	Asn	Leu	Arg	Asp	Leu	Pro	Leu	Arg
		195					200					205			
Tyr	Leu	Ser	Leu	Asp	Gly	Asn	Pro	Leu	Ala	Val	Ile	Gly	Pro	Gly	Ala
	210					215					220				
Phe	Ala	Gly	Leu	Gly	Gly	Leu	Thr	His	Leu	Ser	Leu	Ala	Ser	Leu	Gln
225					230					235					240
Arg	Leu	Pro	Glu	Leu	Ala	Pro	Ser	Gly	Phe	Arg	Glu	Leu	Pro	Gly	Leu

	245		250		255
Gln Val Leu Xaa Leu Ser Gly Asn Pro Lys Leu Asn Trp Ala Gly Ala	260		265		270
Glu Val Phe Ser Gly Leu Ser Ser Leu Gln Glu Leu Asp Leu Ser Gly	275		280		285
Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu Leu His Leu Pro Ala	290		295		300
Leu Gln Ser Val Ser Val Gly Gln Asp Val Arg Cys Arg Arg Leu Val	305		310		315
Arg Glu Gly Thr Tyr Pro Arg Arg Pro Gly Ser Ser Pro Lys Val Ala		325		330	335
Leu His Cys Val Asp Thr Arg Glu Ser Ala Ala Arg Gly Pro Thr Ile		340		345	350
Leu					

<210> 100  
 <211> 353  
 <212> PRT  
 <213> Homo sapiens

<400> 100	
Met Pro Trp Pro Leu Leu Leu Leu Leu Ala Val Ser Gly Ala Gln Thr	
1 5 10 15	
Thr Arg Pro Cys Phe Pro Gly Cys Gln Cys Glu Val Glu Thr Phe Gly	
20 25 30	
Leu Phe Asp Ser Phe Ser Leu Thr Arg Val Asp Cys Ser Gly Leu Gly	
35 40 45	
Pro His Ile Met Pro Val Pro Ile Pro Leu Asp Thr Ala His Leu Asp	
50 55 60	
Leu Ser Ser Asn Arg Leu Glu Met Val Asn Glu Ser Val Leu Ala Gly	
65 70 75 80	
Pro Gly Tyr Thr Thr Leu Ala Gly Leu Asp Leu Ser His Asn Leu Leu	
85 90 95	
Thr Ser Ile Ser Pro Thr Ala Phe Ser Arg Leu Arg Tyr Leu Glu Ser	
100 105 110	
Leu Asp Leu Ser His Asn Gly Leu Thr Ala Leu Pro Ala Glu Ser Phe	
115 120 125	
Thr Ser Ser Pro Leu Ser Asp Val Asn Leu Ser His Asn Gln Leu Arg	
130 135 140	
Glu Val Ser Val Ser Ala Phe Thr Thr His Ser Gln Gly Arg Ala Leu	
145 150 155 160	

His Val Asp Leu Ser His Asn Leu Ile His Arg Leu Val Pro His Pro  
 165 170 175  
 Thr Arg Ala Gly Leu Pro Ala Pro Thr Ile Gln Ser Leu Asn Leu Ala  
 180 185 190  
 Trp Asn Arg Leu His Ala Val Pro Asn Leu Arg Asp Leu Pro Leu Arg  
 195 200 205  
 Tyr Leu Ser Leu Asp Gly Asn Pro Leu Ala Val Ile Gly Pro Gly Ala  
 210 215 220  
 Phe Ala Gly Leu Gly Gly Leu Thr His Leu Ser Leu Ala Ser Leu Gln  
 225 230 235 240  
 Arg Leu Pro Glu Leu Ala Pro Ser Gly Phe Arg Glu Leu Pro Gly Leu  
 245 250 255  
 Gln Val Leu Asp Leu Ser Gly Asn Pro Lys Leu Asn Trp Ala Gly Ala  
 260 265 270  
 Glu Val Phe Ser Gly Leu Ser Ser Leu Gln Glu Leu Asp Leu Ser Gly  
 275 280 285  
 Thr Asn Leu Val Pro Leu Pro Glu Ala Leu Leu Leu His Leu Pro Ala  
 290 295 300  
 Leu Gln Ser Val Ser Val Gly Gln Asp Val Arg Cys Arg Arg Leu Val  
 305 310 315 320  
 Arg Glu Gly Thr Tyr Pro Arg Arg Pro Gly Ser Ser Pro Lys Val Ala  
 325 330 335  
 Leu His Cys Val Asp Thr Arg Glu Ser Ala Ala Arg Gly Pro Thr Ile  
 340 345 350

Leu

<210> 101  
 <211> 285  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (259)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (262)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (280)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 101

Met	Gly	Phe	Leu	Gln	Leu	Leu	Val	Val	Ala	Val	Leu	Ala	Ser	Glu	His	1	5	10	15
Arg	Val	Ala	Gly	Ala	Ala	Glu	Val	Phe	Gly	Asn	Ser	Ser	Glu	Gly	Leu	20	25	30	
Ile	Glu	Phe	Ser	Val	Gly	Lys	Phe	Arg	Tyr	Phe	Glu	Leu	Asn	Arg	Pro	35	40	45	
Phe	Pro	Glu	Glu	Ala	Ile	Leu	His	Asp	Ile	Ser	Ser	Asn	Val	Thr	Phe	50	55	60	
Leu	Ile	Phe	Gln	Ile	His	Ser	Gln	Tyr	Gln	Asn	Thr	Thr	Val	Ser	Phe	65	70	75	80
Ser	Pro	Thr	Leu	Leu	Ser	Asn	Ser	Ser	Glu	Thr	Gly	Thr	Ala	Ser	Gly	85	90	95	
Leu	Val	Phe	Ile	Leu	Arg	Pro	Glu	Gln	Ser	Thr	Cys	Thr	Trp	Tyr	Leu	100	105	110	
Gly	Thr	Ser	Gly	Ile	Gln	Pro	Val	Gln	Asn	Met	Ala	Ile	Leu	Leu	Ser	115	120	125	
Tyr	Ser	Glu	Arg	Asp	Pro	Val	Pro	Gly	Gly	Cys	Asn	Leu	Glu	Phe	Asp	130	135	140	
Leu	Asp	Ile	Asp	Pro	Asn	Ile	Tyr	Leu	Glu	Tyr	Asn	Phe	Phe	Glu	Thr	145	150	155	160
Thr	Ile	Lys	Phe	Ala	Pro	Ala	Asn	Leu	Gly	Tyr	Ala	Arg	Gly	Val	Asp	165	170	175	
Pro	Pro	Pro	Cys	Asp	Ala	Gly	Thr	Asp	Gln	Asp	Ser	Arg	Trp	Arg	Leu	180	185	190	
Gln	Tyr	Asp	Val	Tyr	Gln	Tyr	Phe	Leu	Pro	Glu	Asn	Asp	Leu	Thr	Glu	195	200	205	
Glu	Met	Leu	Leu	Lys	His	Leu	Gln	Arg	Met	Val	Ser	Val	Pro	Gln	Val	210	215	220	
Lys	Ala	Ser	Ala	Leu	Lys	Val	Val	Thr	Leu	Thr	Ala	Asn	Asp	Lys	Thr	225	230	235	240
Ser	Val	Ser	Phe	Ser	Ser	Leu	Pro	Gly	Gln	Gly	Val	Ile	Tyr	Asn	Val	245	250	255	
Ile	Val	Xaa	Gly	Pro	Xaa	Ser	Lys	Tyr	Ile	Cys	Cys	Leu	His	Ser	Cys	260	265	270	
Ser	His	Ile	Arg	Leu	Gln	Leu	Xaa	Arg	Ala	Gly	Arg	Gly	275	280	285				

<210> 102



&lt;211&gt; 417

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 102

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Leu Phe Leu Phe Ser Lys Tyr Thr His Ser Ile Arg Ile Gln Leu Phe
 1           5           10           15

Pro Phe Leu Arg Gly Val Asp Pro Pro Pro Cys Asp Ala Gly Thr Asp
          20           25           30

Gln Asp Ser Arg Trp Arg Leu Gln Tyr Asp Val Tyr Gln Tyr Phe Leu
          35           40           45

Pro Glu Asn Asp Leu Thr Glu Glu Met Leu Leu Lys His Leu Gln Arg
 50           55           60

Met Val Ser Val Pro Gln Val Lys Ala Ser Ala Leu Lys Val Val Thr
 65           70           75           80

Leu Thr Ala Asn Asp Lys Thr Ser Val Ser Phe Ser Ser Leu Pro Gly
          85           90           95

Gln Gly Val Ile Tyr Asn Val Ile Val Trp Asp Pro Phe Leu Asn Thr
          100           105           110

Ser Ala Ala Tyr Ile Pro Ala His Thr Tyr Ala Cys Ser Phe Glu Ala
          115           120           125

Gly Glu Gly Ser Cys Ala Ser Leu Gly Arg Val Ser Ser Lys Val Phe
 130           135           140

Phe Thr Leu Phe Ala Leu Leu Gly Phe Phe Ile Cys Phe Phe Gly His
 145           150           155           160

Arg Phe Trp Lys Thr Glu Leu Phe Phe Ile Gly Phe Ile Ile Met Gly
          165           170           175

Phe Phe Phe Tyr Ile Leu Ile Thr Arg Leu Thr Pro Ile Lys Tyr Asp
          180           185           190

Val Asn Leu Ile Leu Thr Ala Val Thr Gly Ser Val Gly Gly Met Phe
          195           200           205

Leu Val Ala Val Trp Trp Arg Phe Gly Ile Leu Ser Ile Cys Met Leu
 210           215           220

Cys Val Gly Leu Val Leu Gly Phe Leu Ile Ser Ser Val Thr Phe Phe
 225           230           235           240

Thr Pro Leu Gly Asn Leu Lys Ile Phe His Asp Asp Gly Val Phe Trp
          245           250           255

Val Thr Phe Ser Cys Ile Ala Ile Leu Ile Pro Val Val Phe Met Gly
          260           265           270

Cys Leu Arg Ile Leu Asn Ile Leu Thr Cys Gly Val Ile Gly Ser Tyr
          275           280           285

Ser Val Val Leu Ala Ile Asp Ser Tyr Trp Ser Thr Ser Leu Ser Tyr

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290		295		300
Ile Thr Leu Asn Val	Leu Lys Arg Ala Leu Asn Lys Asp Phe His Arg			
305	310	315		320
Ala Phe Thr Asn Val	Pro Phe Gln Thr Asn Asp Phe Ile Ile Leu Ala			
	325	330		335
Val Trp Gly Met Leu Ala Val Ser Gly Ile Thr Leu Gln Ile Arg Arg				
	340	345		350
Glu Arg Gly Arg Pro Phe Phe Pro Pro His Pro Tyr Lys Leu Trp Lys				
	355	360		365
Gln Glu Arg Glu Arg Arg Val Thr Asn Ile Leu Asp Pro Ser Tyr His				
	370	375		380
Ile Pro Pro Leu Arg Glu Arg Leu Tyr Gly Arg Leu Thr Gln Ile Lys				
	385	390		395
Gly Leu Phe Gln Lys Glu Gln Pro Ala Gly Glu Arg Thr Pro Leu Leu				
	405	410		415

Leu

<210> 103  
 <211> 363  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 103

Met Gly Phe Leu Gln Leu Leu Val Val Ala Val Leu Ala Ser Glu His				
1	5	10		15
Arg Val Ala Gly Ala Ala Glu Val Phe Gly Asn Ser Ser Glu Gly Leu				
	20	25		30
Ile Glu Phe Ser Val Gly Lys Phe Arg Tyr Phe Glu Leu Asn Arg Pro				
	35	40		45
Phe Pro Glu Glu Ala Ile Leu His Asp Ile Ser Ser Asn Val Thr Phe				
	50	55		60
Leu Ile Phe Gln Ile His Ser Gln Tyr Gln Asn Thr Thr Val Ser Phe				
	65	70		75
Ser Pro Thr Leu Leu Ser Asn Ser Ser Glu Thr Gly Thr Ala Ser Gly				
	85	90		95
Leu Val Phe Ile Leu Arg Pro Glu Gln Ser Thr Cys Thr Trp Tyr Leu				
	100	105		110
Gly Thr Ser Gly Ile Gln Pro Val Gln Asn Met Ala Ile Leu Leu Ser				
	115	120		125
Tyr Ser Glu Arg Asp Pro Val Pro Gly Gly Cys Asn Leu Glu Phe Asp				
	130	135		140

Leu Asp Ile Asp Pro Asn Ile Tyr Leu Glu Tyr Asn Phe Phe Glu Thr  
 145 150 155 160  
 Thr Ile Lys Phe Ala Pro Ala Asn Leu Gly Tyr Ala Arg Gly Val Asp  
 165 170 175  
 Pro Pro Pro Cys Asp Ala Gly Thr Asp Gln Asp Ser Arg Trp Arg Leu  
 180 185 190  
 Gln Tyr Asp Val Tyr Gln Tyr Phe Leu Pro Glu Asn Asp Leu Thr Glu  
 195 200 205  
 Glu Met Leu Leu Lys His Leu Gln Arg Met Val Ser Val Pro Gln Val  
 210 215 220  
 Lys Ala Ser Ala Leu Lys Val Val Thr Leu Thr Ala Asn Asp Lys Thr  
 225 230 235 240  
 Ser Val Ser Phe Ser Ser Leu Pro Gly Gln Gly Val Ile Tyr Asn Val  
 245 250 255  
 Ile Val Trp Asp Leu Phe Leu Asn Thr Ser Ala Ala Tyr Ile Pro Ala  
 260 265 270  
 His Thr Tyr Ala Cys Ser Phe Glu Ala Gly Glu Gly Ser Cys Ala Ser  
 275 280 285  
 Leu Gly Arg Val Ser Ser Lys Val Phe Phe Thr Leu Phe Ala Leu Leu  
 290 295 300  
 Gly Phe Phe Ile Cys Phe Phe Gly Gln Arg Phe Trp Lys Thr Glu Leu  
 305 310 315 320  
 Phe Phe Ile Gly Phe Ile Ile Met Gly Phe Phe Phe Tyr Ile Leu Ile  
 325 330 335  
 Thr Arg Leu Thr Pro Ile Lys Tyr Asp Ala Glu His Thr Asp Leu Trp  
 340 345 350  
 Ser His Trp Leu Leu Phe Gly Gly Phe Ser His  
 355 360

&lt;210&gt; 104

&lt;211&gt; 79

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (42)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (49)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.

<220>  
 <221> SITE  
 <222> (69)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (76)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 104  
 Met Leu Val Lys Gly Glu Gly Val Arg Leu Val Leu Arg Leu Leu Gly  
           1                  5                  10                  15  
 Arg Asn Gly Leu His Leu Ala Pro Leu Pro Ala Leu Leu Leu His Phe  
                   20                  25                  30  
 Leu Met Leu Pro Leu Ser Ala Pro Val Xaa Tyr Ser Leu Pro Ala Gly  
                   35                  40                  45  
 Xaa Cys Leu Gln Gly Thr Gly Ser Ser Ser Phe Tyr Ser Val Lys Phe  
           50                  55                  60  
 Ser Gly Ser Leu Xaa Gly Gly Lys Gly Lys Pro Xaa Asn Trp Pro  
           65                  70                  75

<210> 105  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<400> 105  
 Met Leu Val Lys Gly Glu Gly Val Arg Leu Val Leu Arg Leu Leu Gly  
           1                  5                  10                  15  
 Arg Asn Gly Leu His Leu Ala Pro Leu Pro Ala Leu Leu Leu His Phe  
                   20                  25                  30  
 Leu Met Leu Pro Leu Ser Ala Pro Val Ala Tyr Ser Leu Pro Ala Gly  
                   35                  40                  45  
 Ala Cys Leu Gln Gly Thr Gly Ser Ser Ser Leu Leu Leu Cys Gln Val  
           50                  55                  60  
 Gln Leu Leu Thr Ala Arg Glu  
           65                  70

<210> 106  
 <211> 31  
 <212> PRT  
 <213> Homo sapiens

<400> 106  
 Met Phe Glu Ala Leu Trp Ala Thr Asp Tyr Leu Cys Cys Leu Phe Leu  
           1                  5                  10                  15

Phe Val Ser Phe Phe Arg Pro Leu Gln Lys Cys Lys Asn His Ser  
                   20                                  25                                  30

<210> 107  
 <211> 26  
 <212> PRT  
 <213> Homo sapiens

<400> 107  
 Glu Ile Met Thr Arg Thr Asp Trp Val Lys Met Trp Phe Val Phe Leu  
   1                                  5                                  10                                  15

Leu Gln Leu Ala Pro Ala Cys Pro Pro Arg  
                   20                                  25

<210> 108  
 <211> 31  
 <212> PRT  
 <213> Homo sapiens

<400> 108  
 Met Phe Glu Ala Leu Trp Ala Thr Asp Tyr Leu Cys Cys Leu Phe Leu  
   1                                  5                                  10                                  15

Phe Val Ser Phe Phe Arg Pro Leu Gln Lys Cys Lys Asn His Ser  
                   20                                  25                                  30

<210> 109  
 <211> 118  
 <212> PRT  
 <213> Homo sapiens

<400> 109  
 Met Glu Phe Val Ser Gly Gly Lys Thr Glu Ile Leu Met Leu Phe Thr  
   1                                  5                                  10                                  15

Leu Leu Val Ser Cys Tyr Val Phe Leu Pro Leu Ala Leu Pro Cys Phe  
                   20                                  25                                  30

Ala Phe Phe Phe Ser Phe Trp Pro Ile Pro Phe Tyr Met Cys Pro Gln  
                   35                                  40                                  45

Gln Arg Trp Gly Asp Thr Glu His Pro Gly Ser Phe Pro Ala Leu Leu  
                   50                                  55                                  60

Gly Arg Pro Arg Leu Gln Ala Pro Ala Val Glu Thr Leu Lys Gly Asn  
   65                                  70                                  75                                  80

Lys Gln Pro Ser Thr Leu Pro Asp Pro Arg Leu Phe Arg Glu Ala Ala  
                   85                                  90                                  95

His Phe His Pro Gly Pro Arg Thr Pro Ser Leu Cys Pro Thr Arg Ile  
                   100                                  105                                  110

Ser Leu Asn Gly Arg Asp  
115

<210> 110  
<211> 157  
<212> PRT  
<213> Homo sapiens

<400> 110  
Ser Cys Leu Pro Pro Leu Pro Leu Asn Leu Pro Leu Pro Pro Cys Leu  
1 5 10 15  
Cys Pro Leu Leu Gln Leu Asn Ala Ala Met Thr Arg Lys Glu Lys Thr  
20 25 30  
Lys Glu Gly Gln Arg Ala Ala Gln Phe Ser Ala Gly Ala Asp Ala Gly  
35 40 45  
Ser Gly Gly Gly Leu Ser Arg Gln Lys Asp Thr Lys Arg Pro Met Leu  
50 55 60  
Leu Val Ile His Asp Val Val Leu Glu Leu Leu Thr Ser Ser Asp Cys  
65 70 75 80  
His Ala Asn Pro Arg Lys Tyr Pro Thr Cys Gln Lys Ser Glu Val Leu  
85 90 95  
Gly Val Ser Ile Tyr Val Ser Ile Cys Pro Ser Thr Arg Pro Arg Asp  
100 105 110  
Lys Asn Lys Thr Lys Lys Arg Cys Gln Val Leu Glu Ala Val Leu Val  
115 120 125  
Ser Lys Pro Ser Gly Ser Cys His Gln Gly Ser Phe Glu Ile Val Pro  
130 135 140  
His Val Lys Gly Asn Leu Ala Phe Thr Ser Ser Asn His  
145 150 155

<210> 111  
<211> 118  
<212> PRT  
<213> Homo sapiens

<400> 111  
Met Glu Phe Val Ser Gly Gly Lys Thr Glu Ile Leu Met Leu Phe Thr  
1 5 10 15  
Leu Leu Val Ser Cys Tyr Val Phe Leu Pro Leu Ala Leu Pro Cys Phe  
20 25 30  
Ala Phe Phe Phe Ser Phe Trp Pro Ile Pro Phe Tyr Met Cys Pro Gln  
35 40 45  
Gln Arg Trp Gly Asp Thr Glu His Pro Gly Ser Phe Pro Ala Leu Leu  
50 55 60

Gly Arg Pro Arg Leu Gln Ala Pro Ala Val Glu Thr Leu Lys Gly Asn  
65 70 75 80

Lys Gln Pro Ser Thr Leu Pro Asp Pro Arg Leu Phe Arg Glu Ala Ala  
85 90 95

His Phe His Pro Gly Pro Arg Thr Pro Ser Leu Cys Pro Thr Arg Ile  
100 105 110

Ser Leu Asn Gly Arg Asp  
115

<210> 112

<211> 74

<212> PRT

<213> Homo sapiens

<400> 112

Leu Ala Leu His Arg Cys Ser Leu Ser Cys Leu Gln Val Ser Val Cys  
1 5 10 15

Gly Val Gly Tyr Gly Glu Glu Asn Leu His Gly Gly Pro Pro Gly Leu  
20 25 30

Val Val Gln Ala Val Pro Arg His Ile Leu Ile Pro Ser Met Gly His  
35 40 45

Leu Lys Met Asn Asn Asn Ser Gln Asn Phe Cys Glu Ile Lys Ser Ser  
50 55 60

Phe Lys Arg Ser His Leu Ser Lys Arg Phe  
65 70

<210> 113

<211> 199

<212> PRT

<213> Homo sapiens

<400> 113

Met Lys Ser Gly Leu Trp Tyr Phe Phe Leu Phe Cys Leu Arg Ile Lys  
1 5 10 15

Val Leu Thr Gly Glu Ile Asn Gly Ser Ala Asn Tyr Glu Met Phe Ile  
20 25 30

Phe His Asn Gly Gly Val Gln Ile Leu Cys Lys Tyr Pro Asp Ile Val  
35 40 45

Gln Gln Phe Lys Met Gln Leu Leu Lys Gly Gly Gln Ile Leu Cys Asp  
50 55 60

Leu Thr Lys Thr Lys Gly Ser Gly Asn Thr Val Ser Ile Lys Ser Leu  
65 70 75 80

Lys Phe Cys His Ser Gln Leu Ser Asn Asn Ser Val Ser Phe Phe Leu

85 90 95  
 Tyr Asn Leu Asp His Ser His Ala Asn Tyr Tyr Phe Cys Asn Leu Ser  
 100 105 110  
 Ile Phe Asp Pro Pro Pro Phe Lys Val Thr Leu Thr Gly Gly Tyr Leu  
 115 120 125  
 His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Phe Trp Leu Pro  
 130 135 140  
 Ile Gly Cys Ala Ala Phe Val Val Val Cys Ile Leu Gly Cys Ile Leu  
 145 150 155 160  
 Ile Cys Trp Leu Thr Lys Lys Lys Tyr Ser Ser Ser Val His Asp Pro  
 165 170 175  
 Asn Gly Glu Tyr Met Phe Met Arg Ala Val Asn Thr Ala Lys Lys Ser  
 180 185 190  
 Arg Leu Thr Asp Val Thr Leu  
 195

&lt;210&gt; 114

&lt;211&gt; 199

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 114

Met Lys Ser Gly Leu Trp Tyr Phe Phe Leu Phe Cys Leu Arg Ile Lys  
 1 5 10 15  
 Val Leu Thr Gly Glu Ile Asn Gly Ser Ala Asn Tyr Glu Met Phe Ile  
 20 25 30  
 Phe His Asn Gly Gly Val Gln Ile Leu Cys Lys Tyr Pro Asp Ile Val  
 35 40 45  
 Gln Gln Phe Lys Met Gln Leu Leu Lys Gly Gly Gln Ile Leu Cys Asp  
 50 55 60  
 Leu Thr Lys Thr Lys Gly Ser Gly Asn Thr Val Ser Ile Lys Ser Leu  
 65 70 75 80  
 Lys Phe Cys His Ser Gln Leu Ser Asn Asn Ser Val Ser Phe Phe Leu  
 85 90 95  
 Tyr Asn Leu Asp His Ser His Ala Asn Tyr Tyr Phe Cys Asn Leu Ser  
 100 105 110  
 Ile Phe Asp Pro Pro Pro Phe Lys Val Thr Leu Thr Gly Gly Tyr Leu  
 115 120 125  
 His Ile Tyr Glu Ser Gln Leu Cys Cys Gln Leu Lys Phe Trp Leu Pro  
 130 135 140  
 Ile Gly Cys Ala Ala Phe Val Val Val Cys Ile Leu Gly Cys Ile Leu  
 145 150 155 160



Ile Cys Trp Leu Thr Lys Lys Lys Tyr Ser Ser Ser Val His Asp Pro  
                                   165                                  170                                  175

Asn Gly Glu Tyr Met Phe Met Arg Ala Val Asn Thr Ala Lys Lys Ser  
                                   180                                  185                                  190

Arg Leu Thr Asp Val Thr Leu  
                                   195

<210> 115

<211> 91

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (12)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (49)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (51)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 115

Met Val Leu Arg Gly Trp Gly Leu Ala Trp Ser Xaa Ser Pro Val Val  
   1                                  5                                  10                                  15

Cys Gly Tyr Ser Gly Asp Met Lys Gly Val Cys Trp Gly Arg Ser Asp  
                                   20                                  25                                  30

His Ser Leu Leu Pro Ser Glu Ile Leu Leu Pro Pro Ala Pro Cys Pro  
                                   35                                  40                                  45

Xaa Ser Xaa Val Leu His Asn Pro Pro Pro Thr Pro His Leu Pro Ser  
   50                                  55                                  60

Pro Val Leu Val Arg Ile Gln Glu Ala Pro Thr Trp Ala Gln Arg Ser  
   65                                  70                                  75                                  80

Ser Leu Gly Ala Ser Pro Leu His Lys Gly Asp  
                                   85                                  90

<210> 116

<211> 6

<212> PRT

<213> Homo sapiens

<400> 116

Trp Ala Leu Pro Met Ser

1

5

```
<210> 117
<211> 14
<212> PRT
<213> Homo sapiens
```

<400> 117  
Gly Cys Ser Leu Tyr Asn Ser Phe Asn Asn Leu Leu Cys Leu  
1 5 10

```
<210> 118
<211> 4
<212> PRT
<213> Homo sapiens
```

<400> 118  
Leu Arg Glu Leu  
1

```
<210> 119
<211> 91
<212> PRT
<213> Homo sapiens
```

```
<400> 119
Met Val Leu Arg Gly Trp Gly Leu Ala Trp Ser Leu Ser Pro Val Val
  1             5             10             15
```

Cys Gly Tyr Ser Gly Asp Met Lys Gly Val Cys Trp Gly Arg Ser Asp  
20 25 30

His Ser Leu Leu Pro Ser Glu Ile Leu Leu Pro Pro Ala Pro Cys Pro  
35 40 45

Ser Ser Ala Val Leu His Asn Pro Pro Pro Thr Pro His Leu Pro Ser  
50 55 60

Pro Val Leu Val Arg Ile Gln Glu Ala Pro Thr Trp Ala Gln Arg Ser  
65 70 75 80

Ser Leu Gly Ala Ser Pro Leu His Lys Gly Asp  
                    85                    90

```
<210> 120
<211> 75
<212> PRT
<213> Homo sapiens
```

<400> 120  
Glu Asp Met Pro Arg Arg Lys Glu Glu Leu Thr Asp Tyr Gln Lys Lys  
1 5 10 15

Lys Val Ile Leu Gln Asn Leu Lys His Ser Leu Phe Leu Ser Leu Leu  
                     20                    25                    30  
 Ser His Tyr Phe Tyr Ser Asn Pro Leu Glu Tyr Leu His Phe Ala Ser  
                     35                    40                    45  
 Glu Gln Arg Asp Lys Phe Phe Ser His His Val Cys Thr Gly Val Val  
                     50                    55                    60  
 Leu Ile Leu Asp Ile Ala Gly Thr Asn Phe Ser  
                     65                    70                    75

<210> 121  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 121  
 Met Met Ile Tyr Phe Ala Leu Leu Leu Ala Ser Leu Phe Phe Leu Leu  
   1                    5                    10                    15  
 Lys Val Lys Ser His Phe Gly Cys Lys Asn Val Thr Thr Thr Ser Ala  
                     20                    25                    30  
 Arg Ile Phe Leu Lys Pro Leu Cys Thr Pro Lys Ser Ile Phe Pro Leu  
                     35                    40                    45  
 Ser Arg Tyr Gly Arg Met Ser Ser  
                     50                    55

<210> 122  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 122  
 Met Met Ile Tyr Phe Ala Leu Leu Leu Ala Ser Leu Phe Phe Leu Leu  
   1                    5                    10                    15  
 Lys Val Lys Ser His Phe Gly Cys Lys Asn Val Thr Thr Thr Ser Ala  
                     20                    25                    30  
 Arg Ile Phe Leu Lys Pro Leu Cys Thr Pro Lys Ser Ile Phe Pro Leu  
                     35                    40                    45  
 Ser Arg Tyr Gly Arg Met Ser Ser  
                     50                    55

<210> 123  
 <211> 59  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 123

Met Gly Asn Gln Asp Glu Asn Gln Gly Leu Ser Val Ile Arg Leu Leu  
 1 5 10 15

Leu Ile Ile Thr Ile Arg Arg Val Gln Met Trp Asp Lys Ile Leu Thr  
 20 25 30

Pro Ala Phe Ser Gln Met Val Asn Leu Pro Val Ala Leu Glu Leu His  
 35 40 45

Ile Val Leu Phe Val Cys Phe Thr Glu Ser Val  
 50 55

&lt;210&gt; 124

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (7)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (22)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (24)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (111)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 124

Gln Arg Ala Met Ala Cys Xaa Phe Gly Ile Leu Leu Ile Val Ser Ala  
 1 5 10 15

Thr Leu Cys Phe Gly Xaa Leu Xaa Gly Phe Leu Met Thr Leu Pro Gln  
 20 25 30

Lys Arg Lys Ser Phe Gln Ser Lys Ser Phe Val Arg Leu Lys Asp Val  
 35 40 45

Thr Ala Tyr Met Trp Glu Lys Val Leu Thr Phe Leu Arg Leu Glu Thr  
 50 55 60

Pro Lys Leu Glu Glu Ala Glu Met Val Glu Asn His Asn Tyr Tyr Leu  
 65 70 75 80

Asp Glu Phe Ala Asn Leu Leu Asp Glu Leu Leu Met Lys Ile Asn Gly  
 85 90 95

Leu Ser Asp Ser Leu Gln Leu Pro Leu Leu Glu Lys Thr Ser Xaa Asn

100

105

110

Thr Gly

&lt;210&gt; 125

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (81)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (84)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 125

Met	Asp	Ile	Leu	Met	Leu	Leu	Leu	Leu	Leu	Cys	Val	Ile	Tyr	Gly	Arg
1				5					10					15	

Phe	Ser	Gln	Asp	Glu	Tyr	Ser	Leu	Asn	Gln	Ala	Ile	Arg	Lys	Glu	Phe
			20					25					30		

Thr	Arg	Asn	Ala	Arg	Asn	Cys	Leu	Gly	Gly	Leu	Arg	Asn	Ile	Ala	Asp
		35					40					45			

Trp	Trp	Asp	Trp	Ser	Leu	Thr	Thr	Leu	Leu	Asp	Gly	Leu	Tyr	Pro	Gly
	50					55					60				

Gly	Thr	Pro	Ser	Ala	Arg	Val	Pro	Gly	Ala	Ser	Ala	Trp	Ser	Ser	Trp
65					70					75					80

Xaa	Lys	Met	Xaa	Thr
				85

&lt;210&gt; 126

&lt;211&gt; 561

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 126

Met	Asp	Ile	Leu	Met	Leu	Leu	Leu	Leu	Leu	Cys	Val	Ile	Tyr	Gly	Arg
1				5					10					15	

Phe	Ser	Gln	Asp	Glu	Tyr	Ser	Leu	Asn	Gln	Ala	Ile	Arg	Lys	Glu	Phe
			20					25					30		

Thr	Arg	Asn	Ala	Arg	Asn	Cys	Leu	Gly	Gly	Leu	Arg	Asn	Ile	Ala	Asp
		35					40					45			

Trp	Trp	Asp	Trp	Ser	Leu	Thr	Thr	Leu	Leu	Asp	Gly	Leu	Tyr	Pro	Gly
	50					55					60				

Gly Thr Pro Ser Ala Arg Val Pro Gly Ala Gln Pro Gly Ala Leu Gly  
 65 70 75 80  
 Gly Lys Cys Tyr Leu Ile Gly Ser Ser Val Ile Arg Gln Leu Lys Val  
 85 90 95  
 Phe Pro Arg His Leu Cys Lys Pro Pro Arg Pro Phe Ser Ala Leu Ile  
 100 105 110  
 Glu Asp Ser Ile Pro Thr Cys Ser Pro Glu Val Gly Gly Pro Glu Asn  
 115 120 125  
 Pro Tyr Leu Ile Asp Pro Glu Asn Gln Asn Val Thr Leu Asn Gly Pro  
 130 135 140  
 Gly Gly Cys Gly Thr Arg Glu Asp Cys Val Leu Ser Leu Gly Arg Thr  
 145 150 155 160  
 Arg Thr Glu Ala His Thr Ala Leu Ser Arg Leu Arg Ala Ser Met Trp  
 165 170 175  
 Ile Asp Arg Ser Thr Arg Ala Val Ser Val His Phe Thr Leu Tyr Asn  
 180 185 190  
 Pro Pro Thr Gln Leu Phe Thr Ser Val Ser Leu Arg Val Glu Ile Leu  
 195 200 205  
 Pro Thr Gly Ser Leu Val Pro Ser Ser Leu Val Glu Ser Phe Ser Ile  
 210 215 220  
 Phe Arg Ser Asp Ser Ala Leu Gln Tyr His Leu Met Leu Pro Gln Leu  
 225 230 235 240  
 Val Phe Leu Ala Leu Ser Leu Ile His Leu Cys Val Gln Leu Tyr Arg  
 245 250 255  
 Met Met Asp Lys Gly Val Leu Ser Tyr Trp Arg Lys Pro Arg Asn Trp  
 260 265 270  
 Leu Glu Leu Ser Val Val Gly Val Ser Leu Thr Tyr Tyr Ala Val Ser  
 275 280 285  
 Gly His Leu Val Thr Leu Ala Gly Asp Val Thr Asn Gln Phe His Arg  
 290 295 300  
 Gly Leu Cys Arg Ala Phe Met Asp Leu Thr Leu Met Ala Ser Trp Asn  
 305 310 315 320  
 Gln Arg Ala Arg Trp Leu Arg Gly Ile Leu Leu Phe Leu Phe Thr Leu  
 325 330 335  
 Lys Cys Val Tyr Leu Pro Gly Ile Gln Asn Thr Met Ala Ser Cys Ser  
 340 345 350  
 Ser Met Met Arg His Ser Leu Pro Ser Ile Phe Val Ala Gly Leu Val  
 355 360 365  
 Gly Ala Leu Met Leu Ala Ala Leu Ser His Leu His Arg Phe Leu Leu  
 370 375 380

Ser Met Trp Val Leu Pro Pro Gly Thr Phe Thr Asp Ala Phe Pro Gly  
 385 390 395 400  
 Leu Leu Phe His Phe Pro Arg Arg Ser Gln Lys Asp Cys Leu Leu Gly  
 405 410 415  
 Leu Ser Lys Ser Asp Gln Arg Ala Met Ala Cys Tyr Phe Gly Ile Leu  
 420 425 430  
 Leu Ile Val Ser Ala Thr Leu Cys Phe Gly Met Leu Arg Gly Phe Leu  
 435 440 445  
 Met Thr Leu Pro Gln Lys Arg Lys Ser Phe Gln Ser Lys Ser Phe Val  
 450 455 460  
 Arg Leu Lys Asp Val Thr Ala Tyr Met Trp Glu Lys Val Leu Thr Phe  
 465 470 475 480  
 Leu Arg Leu Glu Thr Pro Lys Leu Glu Glu Ala Glu Met Val Glu Asn  
 485 490 495  
 His Asn Tyr Tyr Leu Asp Glu Phe Ala Asn Leu Leu Asp Glu Leu Leu  
 500 505 510  
 Met Lys Ile Asn Gly Leu Ser Asp Ser Leu Gln Leu Pro Leu Leu Glu  
 515 520 525  
 Lys Thr Ser Asn Asn Thr Gly Glu Ala Arg Thr Glu Glu Ser Pro Leu  
 530 535 540  
 Val Asp Ile Ser Ser Tyr Gln Ala Ala Glu Pro Ala Asp Ile Lys Asp  
 545 550 555 560  
 Phe

<210> 127

<211> 88

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (1)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (19)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (81)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 127

Xaa His Lys Thr Phe Pro Ser Glu Gly Ser Ser Cys Leu Ser Ser Val  
 1 5 10 15  
 Thr Leu Xaa Thr Thr Ala Gln Ala Tyr Phe Thr Leu Pro Pro Pro Thr  
 20 25 30  
 His His Cys Pro Leu Ser Ala Thr Lys Pro His Tyr Ser Ser Asn Asp  
 35 40 45  
 Ala Ser Leu Val Ser Gly Lys Pro Ile Trp Cys Thr Lys Met Leu Cys  
 50 55 60  
 Asn Thr Lys Trp Leu Leu Pro Leu Ile Leu Leu Asn Asn Val Asn Ser  
 65 70 75 80  
 Xaa Arg Ile Asn Phe Met Leu Cys  
 85

<210> 128  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 128  
 Met Trp Lys Val Leu Arg Pro Ser Leu Phe Thr Ala Gly Leu Phe Thr  
 1 5 10 15  
 Ala Ser Phe Phe Tyr Ser Asp Leu Lys Val Ser Thr Glu Leu Met Lys  
 20 25 30  
 Leu Gln His Met Val Phe Lys Ser Phe Pro Leu Lys Cys Thr Leu Glu  
 35 40 45  
 Asn Trp Val Pro Gln Pro His Tyr  
 50 55

<210> 129  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 129  
 Met Trp Lys Val Leu Arg Pro Ser Leu Phe Thr Ala Gly Leu Phe Thr  
 1 5 10 15  
 Ala Ser Phe Phe Tyr Ser Asp Leu Lys Val Ser Thr Glu Leu Met Lys  
 20 25 30  
 Leu Gln His Met Val Phe Lys Ser Phe Pro Leu Lys Cys Thr Leu Glu  
 35 40 45  
 Asn Trp Val Pro Gln Pro Gln Leu Leu Asn  
 50 55



<210> 130  
 <211> 32  
 <212> PRT  
 <213> Homo sapiens

<400> 130  
 Cys Leu Glu Thr Phe Trp Ser Leu Tyr Leu Gly Gly Trp Gly Met Val  
     1                    5                    10                    15  
 Gly Cys Val Cys Tyr Trp His Pro Val Asn Arg Ser Gln Gly Cys Arg  
                     20                    25                    30

<210> 131  
 <211> 199  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (142)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 131  
 Met Lys Leu Gly Cys Val Leu Met Ala Trp Ala Leu Tyr Leu Ser Leu  
     1                    5                    10                    15  
 Gly Val Leu Trp Val Ala Gln Met Leu Leu Ala Ala Ser Phe Glu Thr  
                     20                    25                    30  
 Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser Cys His Thr  
                     35                    40                    45  
 Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe Gln Val Lys Ala  
     50                    55                    60  
 Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val Ser Tyr Asp Trp Leu  
     65                    70                    75                    80  
 Ile Leu Gln Gly Pro Ala Lys Pro Val Phe Glu Gly Asp Leu Leu Val  
                     85                    90                    95  
 Leu Arg Cys Gln Ala Trp Gln Asp Trp Pro Leu Thr Gln Val Thr Phe  
     100                    105                    110  
 Tyr Arg Asp Gly Ser Ala Leu Gly Pro Pro Gly Pro Asn Arg Glu Phe  
     115                    120                    125  
 Ser Ile Thr Val Val Gln Lys Ala Asp Ser Gly His Tyr Xaa Cys Ser  
     130                    135                    140  
 Gly Ile Phe Gln Ser Pro Gly Pro Gly Ile Pro Glu Thr Ala Ser Val  
     145                    150                    155                    160  
 Val Ala Ile Thr Val Gln Glu Leu Phe Pro Ala Pro Ile Leu Leu Leu  
                     165                    170                    175

Gln Gly Trp Lys Asp Ser Ala Lys Gln Gly Gly Ser Pro Gln Asn Ser  
 180 185 190

Arg Ser Pro Gln Leu Gln Lys  
 195

<210> 132  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 132  
 Ser Trp  
 1

<210> 133  
 <211> 359  
 <212> PRT  
 <213> Homo sapiens

<400> 133  
 Met Lys Leu Gly Cys Val Leu Met Ala Trp Ala Leu Tyr Leu Ser Leu  
 1 5 10 15

Gly Val Leu Trp Val Ala Gln Met Leu Leu Ala Ala Ser Phe Glu Thr  
 20 25 30

Leu Gln Cys Glu Gly Pro Val Cys Thr Glu Glu Ser Ser Cys His Thr  
 35 40 45

Glu Asp Asp Leu Thr Asp Ala Arg Glu Ala Gly Phe Gln Val Lys Ala  
 50 55 60

Tyr Thr Phe Ser Glu Pro Phe His Leu Ile Val Ser Tyr Asp Trp Leu  
 65 70 75 80

Ile Leu Gln Gly Pro Ala Lys Pro Val Phe Glu Gly Asp Leu Leu Val  
 85 90 95

Leu Arg Cys Gln Ala Trp Gln Asp Trp Pro Leu Thr Gln Val Thr Phe  
 100 105 110

Tyr Arg Asp Gly Ser Ala Leu Gly Pro Pro Gly Pro Asn Arg Glu Phe  
 115 120 125

Ser Ile Thr Val Val Gln Lys Ala Asp Ser Gly His Tyr His Cys Ser  
 130 135 140

Gly Ile Phe Gln Ser Pro Gly Pro Gly Ile Pro Glu Thr Ala Ser Val  
 145 150 155 160

Val Ala Ile Thr Val Gln Glu Leu Phe Pro Ala Pro Ile Leu Arg Ala  
 165 170 175

Val Pro Ser Ala Glu Pro Gln Ala Gly Gly Pro Met Thr Leu Ser Cys

				180					185					190			
Gln	Thr	Lys	Leu	Pro	Leu	Gln	Arg	Ser	Ala	Ala	Arg	Leu	Leu	Phe	Ser		
		195					200					205					
Phe	Tyr	Lys	Asp	Gly	Arg	Ile	Val	Gln	Ser	Arg	Gly	Leu	Ser	Ser	Glu		
	210					215					220						
Phe	Gln	Ile	Pro	Thr	Ala	Ser	Glu	Asp	His	Ser	Gly	Ser	Tyr	Trp	Cys		
225					230					235					240		
Glu	Ala	Ala	Thr	Glu	Asp	Asn	Gln	Val	Trp	Lys	Gln	Ser	Pro	Gln	Leu		
				245					250					255			
Glu	Ile	Arg	Val	Gln	Gly	Ala	Ser	Ser	Ser	Ala	Ala	Pro	Pro	Thr	Leu		
			260					265					270				
Asn	Pro	Ala	Pro	Gln	Lys	Ser	Ala	Ala	Pro	Gly	Thr	Ala	Pro	Glu	Glu		
		275					280					285					
Ala	Pro	Gly	Pro	Leu	Pro	Pro	Pro	Pro	Thr	Pro	Ser	Ser	Glu	Asp	Pro		
	290					295					300						
Gly	Phe	Ser	Ser	Pro	Leu	Gly	Met	Pro	Asp	Pro	His	Leu	Tyr	His	Gln		
305					310					315					320		
Met	Gly	Leu	Leu	Leu	Lys	His	Met	Gln	Asp	Val	Arg	Val	Leu	Leu	Gly		
				325					330					335			
His	Leu	Leu	Met	Glu	Leu	Arg	Glu	Leu	Ser	Gly	His	Arg	Lys	Pro	Gly		
			340					345					350				
Thr	Thr	Lys	Ala	Thr	Ala	Glu											
		355															

<210> 134  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 134  
 Met Ser Arg Leu Leu  
 1 5

<210> 135  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 135  
 Met Ser Arg Leu Leu  
 1 5

<210> 136

&lt;211&gt; 63

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 136

Phe Leu His Val Phe Thr Ser Val Glu Leu Leu Arg Leu Ser Ser Pro  
 1 5 10 15

Pro Leu Pro Lys Pro Lys Tyr Lys Arg Lys Ser Ser Pro Leu Leu Met  
 20 25 30

Ala Glu Arg Ile Leu Ser Val Ser Gly Leu Phe Gly His Arg Leu Asn  
 35 40 45

Lys Gly Leu Leu Ile His Pro Lys Lys Lys Lys Lys Lys Leu Glu  
 50 55 60

&lt;210&gt; 137

&lt;211&gt; 438

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (42)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 137

Leu Thr Ile Thr Val His Asp Pro Asn Ala Ala Gln Trp Tyr Tyr Gly  
 1 5 10 15

Met Ser Trp Gly Leu Arg Leu Tyr Ile Pro Gly Phe Asp Val Gly Thr  
 20 25 30

Met Phe Thr Ile Gln Lys Lys Ile Leu Xaa Ser Trp Ser Pro Pro Lys  
 35 40 45

Pro Ile Arg Pro Leu Thr Asp Leu Gly Asp Pro Ile Phe Gln Lys His  
 50 55 60

Pro Asp Lys Val Asp Leu Thr Val Pro Gln Pro Phe Leu Val Pro Arg  
 65 70 75 80

Pro Gln Leu Gln Gln Gln His Leu Gln Pro Ser Leu Met Ser Ile Leu  
 85 90 95

Gly Gly Val His His Leu Leu Asn Leu Thr Gln Pro Lys Leu Ala Gln  
 100 105 110

Asp Cys Trp Leu Cys Leu Lys Ala Lys Pro Pro Tyr Tyr Val Gly Leu  
 115 120 125

Gly Val Glu Ala Thr Leu Lys Arg Gly Pro Leu Ser Cys His Thr Arg  
 130 135 140

Pro Arg Ala Leu Thr Ile Gly Asp Val Ser Gly Asn Ala Ser Cys Leu  
 145 150 155 160

Ile Ser Thr Gly Tyr Asn Leu Ser Ala Ser Pro Phe Gln Ala Thr Cys  
 165 170 175  
 Asn Gln Ser Leu Leu Thr Tyr Ile Ser Thr Ser Val Ser Tyr Gln Ala  
 180 185 190  
 Pro Asn Asn Thr Trp Leu Ala Cys Thr Ser Gly Leu Thr Arg Cys Ile  
 195 200 205  
 Asn Gly Thr Glu Pro Gly Pro Leu Leu Cys Val Leu Val His Val Leu  
 210 215 220  
 Pro Gln Val Tyr Val Tyr Ser Gly Pro Glu Gly Arg Gln Leu Ile Ala  
 225 230 235 240  
 Pro Pro Glu Leu His Pro Arg Leu His Gln Ala Val Pro Leu Leu Val  
 245 250 255  
 Pro Leu Leu Ala Gly Leu Ser Ile Ala Gly Ser Ala Ala Ile Gly Thr  
 260 265 270  
 Ala Ala Leu Val Gln Gly Glu Thr Gly Leu Ile Ser Leu Ser Gln Gln  
 275 280 285  
 Val Asp Ala Asp Phe Ser Asn Leu Gln Ser Ala Ile Asp Ile Leu His  
 290 295 300  
 Ser Gln Val Glu Ser Leu Ala Glu Val Val Leu Gln Asn Cys Arg Cys  
 305 310 315 320  
 Leu Asp Leu Leu Phe Leu Ser Gln Gly Gly Leu Cys Ala Ala Leu Gly  
 325 330 335  
 Glu Ser Cys Cys Phe Tyr Ala Asn Gln Ser Gly Val Ile Lys Gly Thr  
 340 345 350  
 Val Lys Lys Val Arg Glu Asn Leu Asp Arg His Gln Gln Glu Arg Glu  
 355 360 365  
 Asn Asn Ile Pro Trp Tyr Gln Ser Met Phe Asn Trp Asn Pro Trp Leu  
 370 375 380  
 Thr Thr Leu Ile Thr Gly Leu Ala Gly Pro Leu Leu Ile Leu Leu Leu  
 385 390 395 400  
 Ser Leu Ile Phe Gly Pro Cys Ile Leu Asn Ser Phe Leu Asn Phe Ile  
 405 410 415  
 Lys Gln Arg Ile Ala Ser Val Lys Leu Thr Tyr Leu Lys Thr Gln Tyr  
 420 425 430  
 Asp Thr Leu Val Asn Asn  
 435

&lt;210&gt; 138

&lt;211&gt; 438

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 138

Leu Thr Ile Thr Val His Asp Pro Asn Ala Ala Gln Trp Tyr Tyr Gly  
 1 5 10 15  
 Met Ser Trp Gly Leu Arg Leu Tyr Ile Pro Gly Phe Asp Val Gly Thr  
 20 25 30  
 Met Phe Thr Ile Gln Lys Lys Ile Leu Val Ser Trp Ser Pro Pro Lys  
 35 40 45  
 Pro Ile Arg Pro Leu Thr Asp Leu Gly Asp Pro Ile Phe Gln Lys His  
 50 55 60  
 Pro Asp Lys Val Asp Leu Thr Val Pro Gln Pro Phe Leu Val Pro Arg  
 65 70 75 80  
 Pro Gln Leu Gln Gln Gln His Leu Gln Pro Ser Leu Met Ser Ile Leu  
 85 90 95  
 Gly Gly Val His His Leu Leu Asn Leu Thr Gln Pro Lys Leu Ala Gln  
 100 105 110  
 Asp Cys Trp Leu Cys Leu Lys Ala Lys Pro Pro Tyr Tyr Val Gly Leu  
 115 120 125  
 Gly Val Glu Ala Thr Leu Lys Arg Gly Pro Leu Ser Cys His Thr Arg  
 130 135 140  
 Pro Arg Ala Leu Thr Ile Gly Asp Val Ser Gly Asn Ala Ser Cys Leu  
 145 150 155 160  
 Ile Ser Thr Gly Tyr Asn Leu Ser Ala Ser Pro Phe Gln Ala Thr Cys  
 165 170 175  
 Asn Gln Ser Leu Leu Thr Tyr Ile Ser Thr Ser Val Ser Tyr Gln Ala  
 180 185 190  
 Pro Asn Asn Thr Trp Leu Ala Cys Thr Ser Gly Leu Thr Arg Cys Ile  
 195 200 205  
 Asn Gly Thr Glu Pro Gly Pro Leu Leu Cys Val Leu Val His Val Leu  
 210 215 220  
 Pro Gln Val Tyr Val Tyr Ser Gly Pro Glu Gly Arg Gln Leu Ile Ala  
 225 230 235 240  
 Pro Pro Glu Leu His Pro Arg Leu His Gln Ala Val Pro Leu Leu Val  
 245 250 255  
 Pro Leu Leu Ala Gly Leu Ser Ile Ala Gly Ser Ala Ala Ile Gly Thr  
 260 265 270  
 Ala Ala Leu Val Gln Gly Glu Thr Gly Leu Ile Ser Leu Ser Gln Gln  
 275 280 285  
 Val Asp Ala Asp Phe Ser Asn Leu Gln Ser Ala Ile Asp Ile Leu His  
 290 295 300  
 Ser Gln Val Glu Ser Leu Ala Glu Val Val Leu Gln Asn Cys Arg Cys

305                      310                      315                      320  
 Leu Asp Leu Leu Phe Leu Ser Gln Gly Gly Leu Cys Ala Ala Leu Gly  
                          325                      330                      335  
 Glu Ser Cys Cys Phe Tyr Ala Asn Gln Ser Gly Val Ile Lys Gly Thr  
                          340                      345                      350  
 Val Lys Lys Val Arg Glu Asn Leu Asp Arg His Gln Gln Glu Arg Glu  
                          355                      360                      365  
 Asn Asn Ile Pro Trp Tyr Gln Ser Met Phe Asn Trp Asn Pro Trp Leu  
                          370                      375                      380  
 Thr Thr Leu Ile Thr Gly Leu Ala Gly Pro Leu Leu Ile Leu Leu Leu  
 385                      390                      395                      400  
 Ser Leu Ile Phe Gly Pro Cys Ile Leu Asn Ser Phe Leu Asn Phe Ile  
                          405                      410                      415  
 Lys Gln Arg Ile Ala Ser Val Lys Leu Thr Tyr Leu Lys Thr Gln Tyr  
                          420                      425                      430  
 Asp Thr Leu Val Asn Asn  
                          435

<210> 139  
 <211> 62  
 <212> PRT  
 <213> Homo sapiens

<400> 139  
 Met Phe Cys Arg Asn Trp Arg Cys Glu Phe Met Met Leu Ser His Asn  
   1                      5                      10                      15  
 Thr Ala Val Met Ile Cys Ser Phe Ser Gln Asn Asp Phe His Ala Ala  
                          20                      25                      30  
 Leu Cys Cys Ser Ser Val Ser Glu Leu Pro Tyr Leu Phe Leu Val Cys  
                          35                      40                      45  
 Ser Thr Tyr Lys Cys Ser Cys His Ala Val Leu Phe Phe Cys  
                          50                      55                      60

<210> 140  
 <211> 62  
 <212> PRT  
 <213> Homo sapiens

<400> 140  
 Met Phe Cys Arg Asn Trp Arg Cys Glu Phe Met Met Leu Ser His Asn  
   1                      5                      10                      15  
 Thr Ala Val Met Ile Cys Ser Phe Ser Gln Asn Asp Phe His Ala Ala  
                          20                      25                      30

Leu Cys Cys Ser Ser Val Ser Glu Leu Pro Tyr Leu Phe Leu Val Cys  
                   35                                  40                                  45

Ser Thr Tyr Lys Cys Ser Cys His Ala Val Leu Phe Phe Cys  
           50                                  55                                  60

<210> 141  
 <211> 76  
 <212> PRT  
 <213> Homo sapiens

<400> 141  
 Ile Asn Phe Thr Tyr Lys Arg Leu Ser Leu Asp Phe Ile Tyr Ile Tyr  
   1                                  5                                  10                                  15

Met Cys Val Cys Val Cys Val Cys Val Cys Val Cys Val Cys Val Tyr  
                   20                                  25                                  30

Leu Lys Arg Thr Cys Ala Ser Ile Lys Gly Asn Lys Met Arg Glu Tyr  
                   35                                  40                                  45

Ile Ile Asp Phe Val Lys Ser Lys Tyr Leu Asn Tyr Gly Phe Ser Ile  
           50                                  55                                  60

Phe Lys Asn Ser Cys Ser Phe Cys Thr Tyr Phe Phe  
   65                                  70                                  75

<210> 142  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 142  
 Met Phe Leu Phe Ile Thr Phe Thr Ile Leu Ala Ile Phe Ile Ile Glu  
   1                                  5                                  10                                  15

Pro Arg Asn Leu Arg Val Asp Leu Asn Leu Ile Lys Phe Gln Thr Ser  
                   20                                  25                                  30

Trp Pro Lys Thr Leu Val Glu Glu Gln Asn  
           35                                  40

<210> 143  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 143  
 Met Phe Leu Phe Ile Thr Phe Thr Ile Leu Ala Ile Phe Ile Ile Glu  
   1                                  5                                  10                                  15

Pro Arg Asn Leu Arg Val Asp Leu Asn Leu Ile Lys Phe Gln Thr Ser  
                   20                                  25                                  30



Trp Pro Lys Thr Leu Val Glu Glu Gln Asn  
           35                          40

<210> 144  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 144  
 Ala Trp Ile Gln Cys Thr Leu Leu Leu Tyr Pro Arg Arg Thr Ser Gln  
       1                          5                          10                          15

Gly Ile His Gln Val Pro Gly  
                           20

<210> 145  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 145  
 Leu Leu Met Arg Gln Pro Trp Val Gly Gln Gly Trp Gly Pro Val Val  
       1                          5                          10                          15

Glu Glu Thr Cys  
                           20

<210> 146  
 <211> 322  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (131)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (185)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (218)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (220)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE

&lt;222&gt; (250)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (312)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 146

Met	Ala	Leu	Pro	Pro	Gly	Pro	Ala	Ala	Leu	Arg	His	Thr	Leu	Leu	Leu
1				5					10					15	

Leu	Pro	Ala	Leu	Leu	Ser	Ser	Gly	Trp	Gly	Glu	Leu	Glu	Pro	Gln	Ile
			20				25						30		

Asp	Gly	Gln	Thr	Trp	Ala	Glu	Arg	Ala	Leu	Arg	Glu	Asn	Glu	Arg	His
	35						40					45			

Ala	Phe	Thr	Cys	Arg	Val	Ala	Gly	Gly	Pro	Gly	Thr	Pro	Arg	Leu	Ala
	50					55					60				

Trp	Tyr	Leu	Asp	Gly	Gln	Leu	Gln	Glu	Ala	Ser	Thr	Ser	Arg	Leu	Leu
65					70					75					80

Ser	Val	Gly	Gly	Glu	Ala	Phe	Ser	Gly	Gly	Thr	Ser	Thr	Phe	Thr	Val
				85					90					95	

Thr	Ala	His	Arg	Ala	Gln	His	Glu	Leu	Asn	Cys	Ser	Leu	Gln	Asp	Pro
			100					105					110		

Arg	Ser	Gly	Arg	Ser	Ala	Asn	Ala	Ser	Val	Ile	Leu	Asn	Val	Gln	Phe
		115					120					125			

Lys	Pro	Xaa	Ile	Ala	Gln	Val	Gly	Ala	Lys	Tyr	Gln	Glu	Ala	Gln	Gly
	130					135					140				

Pro	Gly	Leu	Leu	Val	Val	Leu	Phe	Ala	Leu	Val	Arg	Ala	Asn	Pro	Pro
145					150					155					160

Ala	Asn	Val	Thr	Trp	Ile	Asp	Gln	Asp	Gly	Pro	Val	Thr	Val	Asn	Thr
				165					170					175	

Ser	Asp	Phe	Leu	Val	Leu	Asp	Ala	Xaa	Asn	Tyr	Pro	Trp	Leu	Thr	Asn
		180						185					190		

His	Thr	Val	Gln	Leu	Gln	Leu	Arg	Ser	Leu	Ala	His	Asn	Leu	Ser	Val
		195					200					205			

Val	Ala	Thr	Asn	Asp	Val	Gly	Val	Thr	Xaa	Ala	Xaa	Leu	Pro	Ala	Pro
	210					215					220				

Gly	Pro	Ser	Arg	His	Pro	Ser	Leu	Ile	Ser	Ser	Asp	Ser	Asn	Asn	Leu
225					230					235					240

Lys	Leu	Asn	Asn	Val	Arg	Leu	Pro	Arg	Xaa	Asn	Met	Ser	Leu	Pro	Ser
				245					250					255	

Asn	Leu	Gln	Leu	Asn	Asp	Leu	Thr	Pro	Asp	Ser	Arg	Ala	Val	Lys	Pro
			260					265					270		

Ala Asp Arg Gln Met Ala Gln Asn Asn Ser Arg Pro Glu Leu Leu Asp  
 275 280 285

Pro Glu Pro Gly Gly Leu Leu Thr Ser Gln Gly Phe Ile Arg Leu Pro  
 290 295 300

Val Leu Gly Tyr Ile Tyr Arg Xaa Ser Ser Val Ser Ser Asp Glu Ile  
 305 310 315 320

Trp Leu

<210> 147  
 <211> 322  
 <212> PRT  
 <213> Homo sapiens

<400> 147  
 Met Ala Leu Pro Pro Gly Pro Ala Ala Leu Arg His Thr Leu Leu Leu  
 1 5 10 15

Leu Pro Ala Leu Leu Ser Ser Gly Trp Gly Glu Leu Glu Pro Gln Ile  
 20 25 30

Asp Gly Gln Thr Trp Ala Glu Arg Ala Leu Arg Glu Asn Glu Arg His  
 35 40 45

Ala Phe Thr Cys Arg Val Ala Gly Gly Pro Gly Thr Pro Arg Leu Ala  
 50 55 60

Trp Tyr Leu Asp Gly Gln Leu Gln Glu Ala Ser Thr Ser Arg Leu Leu  
 65 70 75 80

Ser Val Gly Gly Glu Ala Phe Ser Gly Gly Thr Ser Thr Phe Thr Val  
 85 90 95

Thr Ala His Arg Ala Gln His Glu Leu Asn Cys Ser Leu Gln Asp Pro  
 100 105 110

Arg Ser Gly Arg Ser Ala Asn Ala Ser Val Ile Leu Asn Val Gln Phe  
 115 120 125

Lys Pro Glu Ile Ala Gln Val Gly Ala Lys Tyr Gln Glu Ala Gln Gly  
 130 135 140

Pro Gly Leu Leu Val Val Leu Phe Ala Leu Val Arg Ala Asn Pro Pro  
 145 150 155 160

Ala Asn Val Thr Trp Ile Asp Gln Asp Gly Pro Val Thr Val Asn Thr  
 165 170 175

Ser Asp Phe Leu Val Leu Asp Ala Gln Asn Tyr Pro Trp Leu Thr Asn  
 180 185 190

His Thr Val Gln Leu Gln Leu Arg Ser Leu Ala His Asn Leu Ser Val  
 195 200 205

Val Ala Thr Asn Asp Val Gly Val Thr Ser Ala Ser Leu Pro Ala Pro

210		215		220
Gly Pro Ser Arg His	Pro Ser Leu Ile Ser Ser Asp Ser Asn Asn Leu			
225	230	235		240
Lys Leu Asn Asn Val	Arg Leu Pro Arg Glu Asn Met Ser Leu Pro Ser			
	245	250		255
Asn Leu Gln Leu Asn Asp	Leu Thr Pro Asp Ser Arg Ala Val Lys Pro			
	260	265		270
Ala Asp Arg Gln Met Ala	Gln Asn Asn Ser Arg Pro Glu Leu Leu Asp			
	275	280		285
Pro Glu Pro Gly Gly Leu	Leu Thr Ser Gln Gly Phe Ile Arg Leu Pro			
	290	295		300
Val Leu Gly Tyr Ile Tyr	Arg Val Ser Ser Val Ser Ser Asp Glu Ile			
305	310	315		320
Trp Leu				

<210> 148  
 <211> 25  
 <212> PRT  
 <213> Homo sapiens

<400> 148  
 Met Ile Ser Leu Leu Trp Thr Leu Lys Leu Phe Ser Arg Asn Leu Asp  
     1                    5                    10                    15  
 Tyr Ser Gln Lys Arg Lys Ser Trp Cys  
             20                    25

<210> 149  
 <211> 25  
 <212> PRT  
 <213> Homo sapiens

<400> 149  
 Met Ile Ser Leu Leu Trp Thr Leu Lys Leu Phe Ser Arg Asn Leu Asp  
     1                    5                    10                    15  
 Tyr Ser Gln Lys Arg Lys Ser Trp Cys  
             20                    25

<210> 150  
 <211> 18  
 <212> PRT  
 <213> Homo sapiens

<400> 150  
 Thr Lys Ser Ser Asp Phe Gly Gly Gly Cys Arg Asn Ala Ser Ser Ser

1

5

10

15

Cys Cys

&lt;210&gt; 151

&lt;211&gt; 26

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 151

Gly Cys Phe Lys Ile Val Leu Phe Phe Lys Leu Val Ile Phe Ala Lys  
 1 5 10 15

Leu Phe Val Phe Val Val Ser Ile Asn Met  
 20 25

&lt;210&gt; 152

&lt;211&gt; 18

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 152

Thr Lys Ser Ser Asp Phe Gly Gly Gly Cys Arg Asn Ala Ser Ser Ser  
 1 5 10 15

Cys Cys

&lt;210&gt; 153

&lt;211&gt; 143

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 153

Met Val Cys Gly Trp Ile Ile Tyr Gly Ser Phe Ile Tyr Leu Ser Ser  
 1 5 10 15

His Cys Ala Thr Thr Phe Lys Glu Asp Gly Leu Trp Thr Tyr Leu Asn  
 20 25 30

Gln Ile Val Ala Cys Ser Pro Trp Val Leu Tyr Ile Leu Met Leu Ala  
 35 40 45

Thr Phe His Phe Ser Trp Ser Thr Phe Leu Leu Leu Asn Gln Leu Phe  
 50 55 60

Gln Ile Ala Phe Leu Gly Leu Thr Ser His Glu Arg Ile Ser Leu Gln  
 65 70 75 80

Lys Gln Ser Lys His Met Lys Gln Thr Leu Ser Leu Arg Lys Thr Pro  
 85 90 95

Tyr Asn Leu Gly Phe Met Gln Asn Leu Ala Asp Phe Phe Gln Cys Gly

	100		105		110
Cys	Phe Gly Leu Val Lys Pro Cys Val Val Asp Trp Thr Ser Gln Tyr				
	115		120		125
Thr Met Val Phe His Pro Ala Arg Glu Lys Val Leu Arg Ser Val					
	130		135		140

<210> 154  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (91)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (93)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (99)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 154  
 Trp Glu Ser Leu Gly Leu Met Phe Leu Cys Gly Pro His Leu Thr Arg  
 1 5 10 15

Leu Leu Leu Phe Leu Phe Thr Leu Gly Phe Cys Ala Phe Ile Asn Ile  
 20 25 30

Val Leu Ser Phe Pro Leu Val Cys Ile Pro Phe Cys Leu Gly Arg Leu  
 35 40 45

Tyr Phe Leu Leu Leu Thr Glu Lys Pro His Gln Glu Ala Cys Pro Gly  
 50 55 60

Asp Glu Leu Gly Thr Gly His Leu His Ile Gly Leu Gly Ala Val Arg  
 65 70 75 80

Leu Gln Gly Pro Asp Asn Met Arg Asn Glu Xaa Ser Xaa Ile Val Val  
 85 90 95

Gly Asp Xaa Gly Leu  
 100

<210> 155  
 <211> 35  
 <212> PRT  
 <213> Homo sapiens

<400> 155

Met Leu Asn Asp Gly Lys Val Trp Val Ser Cys Phe Cys Val Val Leu  
 1 5 10 15

Thr Ser Leu Asp Phe Cys Ser Phe Cys Ser Leu Trp Ala Ser Val Leu  
 20 25 30

Ser Leu Ile  
 35

<210> 156

<211> 114

<212> PRT

<213> Homo sapiens

<400> 156

Gly Pro Arg Arg Leu Ser Gly Thr His Ser Arg Gly Ser Ser Pro Asp  
 1 5 10 15

Pro Cys Ser Cys Val Val Trp Ala Ser Ala Asn Ser Trp Ala Thr Cys  
 20 25 30

Val Tyr Leu Glu Pro Gly Ser Pro Leu Ser Ser Phe Pro Cys Ala Tyr  
 35 40 45

Ser Gly Thr Cys Leu Val Arg Val Trp Gln Glu Asn Gly Ala Phe Asn  
 50 55 60

Asn Leu Pro Ser Phe Ile Pro Trp Ser Leu Leu His Ala Arg Thr Cys  
 65 70 75 80

Ala His Leu Phe Gly Ala Leu Ser His Leu Ile Asp Ser Arg Pro Gly  
 85 90 95

Ala Val Leu Thr Pro Val Ile Pro Ala Leu Trp Glu Asp Glu Ala Gly  
 100 105 110

Gly Ser

<210> 157

<211> 26

<212> PRT

<213> Homo sapiens

<400> 157

Met Cys Val Ser Pro Val Ser Val Cys Pro Phe Leu Pro Ser Leu His  
 1 5 10 15

Phe Ile Asn Asn Trp Cys Asn Val Ser Ser  
 20 25

<210> 158

<211> 106

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (36)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 158

Gly Ser Asp Gly Pro Arg Glu Arg Ala Pro Val Ala Trp Leu Ser His  
1 5 10 15

Ser Ile Leu Ser Leu Ile Leu Asn Lys Tyr Phe Leu Trp Gly Phe Phe  
20 25 30

Phe Phe Leu Xaa Ala Val Val Cys Phe Lys Leu Thr Thr Trp Lys Lys  
35 40 45

His Leu Gly Tyr Leu Trp Phe Ser Cys Leu Val Pro Ala Ser Thr Pro  
50 55 60

Thr Pro Phe Glu Ser Gly Asp Ser Phe Phe Cys Val Glu Thr Arg Trp  
65 70 75 80

Pro Arg Gln Glu Val Lys Ala Ala Ile Arg Lys Ala Leu Gly Thr Leu  
85 90 95

Val Pro Val Ala Arg Leu Gln Val Thr Ser  
100 105

<210> 159

<211> 201

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (10)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (19)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 159

Leu Ser Ser Leu Leu Pro Gln Arg Leu Xaa Glu Pro Ser Ser Ser Ser  
1 5 10 15

Pro Gly Xaa Arg Thr Trp Gln Leu Ser Gln Lys Ser Arg Gly Pro Ser  
20 25 30

Arg Ala Ser Ser Met Ser Val Leu Asn Ser Leu Arg Ser Ser Ser Trp  
35 40 45

Trp Pro Arg Leu His Thr His Thr Ser Met Pro Glu Ser Pro Val Lys  
50 55 60

Arg Arg Cys Leu Pro Gly Val Phe Ser Leu Leu Ser Gly Ala Pro Cys



65					70					75				80	
Ser	Glu	Leu	Ser	Ser	Phe	Ser	Ser	Ser	Ser	Leu	His	Ser	Ala	Ser	Leu
				85					90					95	
Ser	Arg	Lys	Ala	Pro	Gly	Ser	Ser	Ser	Pro	Arg	Pro	Ala	Thr	Glu	Pro
			100					105					110		
Leu	Gly	Ser	Ile	Pro	Gly	Ala	Leu	Val	Ala	Ala	Arg	Ser	Thr	Gly	Arg
		115					120					125			
Ser	Glu	Gly	Ser	Gly	Ser	Ala	Met	Leu	Gly	Gly	Leu	Val	Leu	Leu	Leu
	130					135					140				
Leu	Gly	Ser	Asp	Lys	Gly	Leu	Leu	Cys	Ala	Pro	Trp	Asp	Pro	Leu	Val
145					150					155				160	
Gly	Ser	Met	Pro	Gly	Gly	Leu	Pro	Pro	Ala	Gly	Pro	His	Cys	Gly	Gly
				165					170					175	
Ser	Ser	Cys	Cys	Cys	Cys	Ser	Trp	Lys	Ala	Leu	Tyr	Gly	Gly	Gly	Gly
			180					185					190		
Val	Gly	Gly	Arg	Phe	Thr	Thr	Ser	Ser							
		195					200								

<210> 160  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 160  
 Met Ala Leu Leu Leu Leu Gln Ala Leu Pro Ser Pro Leu Ser Ala Arg  
 1 5 10 15  
 Ala Glu Pro Pro Gln Asp Lys Glu Ala Cys Val Gly Thr Asn Asn Gln  
 20 25 30  
 Ser Tyr Ile Cys Asp Thr Gly His Cys Cys Gly Gln Ser Gln Cys Cys  
 35 40 45  
 Lys Leu Leu Leu  
 50

<210> 161  
 <211> 118  
 <212> PRT  
 <213> Homo sapiens

<400> 161  
 Leu Leu Leu Leu Gln Ala Leu Pro Ser Pro Leu Ser Ala Arg Ala Glu  
 1 5 10 15  
 Pro Pro Gln Asp Lys Glu Ala Cys Val Gly Thr Asn Asn Gln Ser Tyr  
 20 25 30

Ile Cys Asp Thr Gly His Cys Cys Gly Gln Ser Gln Cys Cys Asn Tyr  
 35 40 45

Tyr Tyr Glu Leu Trp Trp Phe Trp Leu Val Trp Thr Ile Ile Ile Ile  
 50 55 60

Leu Ser Cys Cys Cys Val Cys His His Arg Arg Ala Lys His Arg Leu  
 65 70 75 80

Gln Ala Gln Gln Arg Gln His Glu Ile Asn Leu Ile Ala Tyr Arg Glu  
 85 90 95

Ala His Asn Tyr Ser Ala Leu Pro Phe Tyr Phe Arg Phe Leu Pro Asn  
 100 105 110

Tyr Leu Leu Pro Pro Leu  
 115

<210> 162  
 <211> 363  
 <212> PRT  
 <213> Homo sapiens

<400> 162  
 Met Glu Arg Arg Arg Leu Leu Gly Gly Met Ala Leu Leu Leu Leu Gln  
 1 5 10 15

Ala Leu Pro Ser Pro Leu Ser Ala Arg Ala Glu Pro Pro Gln Asp Lys  
 20 25 30

Glu Ala Cys Val Gly Thr Asn Asn Gln Ser Tyr Ile Cys Asp Thr Gly  
 35 40 45

His Cys Cys Gly Gln Ser Gln Cys Cys Asn Tyr Tyr Tyr Glu Leu Trp  
 50 55 60

Trp Phe Trp Leu Val Trp Thr Ile Ile Ile Ile Leu Ser Cys Cys Cys  
 65 70 75 80

Val Cys His His Arg Arg Ala Lys His Arg Leu Gln Ala Gln Gln Arg  
 85 90 95

Gln His Glu Ile Asn Leu Ile Ala Tyr Arg Glu Ala His Asn Tyr Ser  
 100 105 110

Ala Leu Pro Phe Tyr Phe Arg Phe Leu Pro Asn Tyr Leu Leu Pro Pro  
 115 120 125

Tyr Glu Glu Val Val Asn Arg Pro Pro Thr Pro Pro Pro Tyr Ser  
 130 135 140

Ala Phe Gln Leu Gln Gln Gln Gln Leu Leu Pro Pro Gln Cys Gly Pro  
 145 150 155 160

Ala Gly Gly Ser Pro Pro Gly Ile Asp Pro Thr Arg Gly Ser Gln Gly  
 165 170 175

Ala Gln Ser Ser Pro Leu Ser Glu Pro Ser Arg Ser Ser Thr Arg Pro

180					185					190					
Pro	Ser	Ile	Ala	Asp	Pro	Asp	Pro	Ser	Asp	Leu	Pro	Val	Asp	Arg	Ala
		195					200					205			
Ala	Thr	Lys	Ala	Pro	Gly	Met	Glu	Pro	Ser	Gly	Ser	Val	Ala	Gly	Leu
		210				215					220				
Gly	Glu	Leu	Asp	Pro	Gly	Ala	Phe	Leu	Asp	Lys	Asp	Ala	Glu	Cys	Arg
		225				230					235				240
Glu	Glu	Leu	Leu	Lys	Asp	Asp	Ser	Ser	Glu	His	Gly	Ala	Pro	Asp	Ser
				245					250					255	
Lys	Glu	Lys	Thr	Pro	Gly	Arg	His	Arg	Arg	Phe	Thr	Gly	Asp	Ser	Gly
				260					265					270	
Ile	Glu	Val	Cys	Val	Cys	Asn	Arg	Gly	His	His	Asp	Asp	Asp	Leu	Lys
		275					280					285			
Glu	Val	Asn	Thr	Leu	Ile	Asp	Asp	Ala	Leu	Asp	Gly	Pro	Leu	Asp	Phe
		290					295				300				
Cys	Asp	Ser	Cys	His	Val	Arg	Pro	Pro	Gly	Asp	Glu	Glu	Glu	Gly	Leu
		305				310					315				320
Cys	Gln	Pro	Ser	Glu	Glu	Gln	Ala	Arg	Glu	Pro	Gly	His	Pro	His	Leu
				325					330					335	
Pro	Arg	Pro	Pro	Ala	Cys	Leu	Leu	Leu	Asn	Thr	Ile	Asn	Glu	Gln	Asp
				340					345					350	
Ser	Pro	Asn	Ser	Gln	Ser	Asn	Ser	Ser	Pro	Ser					
		355					360								

&lt;210&gt; 163

&lt;211&gt; 199

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (2)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (6)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (14)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (34)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (51)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 163

Gln Xaa Lys Pro Pro Xaa Pro Ala Ala Pro Ala Ala Pro Xaa Ala Pro  
1 5 10 15

Ala Pro Leu Glu Lys Pro Ile Arg Ser His Glu Ala Thr Gly Gly Gly  
20 25 30

Glu Xaa Ala Cys Gly Val Thr Gly Ala Ser Thr Pro Glu Gly Thr Ala  
35 40 45

Pro Pro Xaa Pro Ala Ala Pro Ala Pro Pro Lys Gly Glu Lys Glu Gly  
50 55 60

Gln Arg Pro Thr Gln Pro Val Tyr Gln Ile Gln Asn Arg Gly Met Gly  
65 70 75 80

Thr Ala Ala Pro Ala Ala Met Asp Arg Glu Leu Gly Leu Gly Ser Thr  
85 90 95

Arg Leu Gly Thr Gly Val Ser Ser Gln Ile Leu Thr Ala Ser Ser Val  
100 105 110

Ser Cys Phe Leu Gln Ser Pro Ala Val Val Gly Gln Ala Lys Leu Leu  
115 120 125

Pro Pro Glu Arg Met Lys His Ser Ile Lys Leu Val Asp Asp Gln Met  
130 135 140

Asn Trp Cys Asp Ser Ala Ile Glu Val Pro Arg Gly Pro Ala Leu Pro  
145 150 155 160

Glu Leu Pro His Ile Leu His Pro Leu Ile Phe His Leu Ser Val Gly  
165 170 175

Asn Thr Arg Leu Glu Gly Phe Glu Ala Thr Tyr Ser Ser Glu Arg Gly  
180 185 190

Trp Tyr Gln Asn Ile Leu Thr  
195

<210> 164

<211> 21

<212> PRT

<213> Homo sapiens

<400> 164

Met Lys Asn Ser Phe Phe Thr Val Ser Trp Ala Leu Thr Cys Ser Phe  
1 5 10 15

Ser Trp Ala Thr Val  
20

<210> 165  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<400> 165  
 Met Lys Asn Ser Phe Phe Thr Val Ser Trp Ala Leu Thr Cys Ser Phe  
           1                  5                  10                  15  
 Ser Trp Ala Thr Val  
                   20

<210> 166  
 <211> 39  
 <212> PRT  
 <213> Homo sapiens

<400> 166  
 Met Pro Leu Phe Arg Thr Phe Lys Gln Leu Gly Leu Phe Leu Phe Leu  
           1                  5                  10                  15  
 Ile Ile Pro Ile Ile Cys Ser Ser Leu Pro Pro Leu Gly Pro Val Gln  
                   20                  25                  30  
 Ser Phe Leu Gly Cys Leu Tyr  
                   35

<210> 167  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 167  
 Met Leu Leu Leu Val Val Thr Leu Val Asn Leu Ser Ile Tyr Lys Leu  
           1                  5                  10                  15  
 Ile Lys Leu Val Thr Ala Leu Ser Lys Lys Leu Gly Ala Lys Gly Val  
                   20                  25                  30  
 Leu Lys Asn Ala His Phe Met Arg Cys Asn Cys Gly Glu Met Arg Thr  
                   35                  40                  45  
 Arg Ser  
           50

<210> 168  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 168

Leu Leu

1

&lt;210&gt; 169

&lt;211&gt; 69

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (6)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (13)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (51)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 169

Trp	Tyr	Gln	Gly	Lys	Xaa	Asp	Leu	Lys	Gly	Leu	Gly	Xaa	Val	Leu	Asp
1				5				10					15		

Gly	Ser	Asp	Gly	Met	Ala	Gly	Gly	Ile	Pro	Glu	Gly	Met	Ala	Phe	Thr
		20						25					30		

Leu	Tyr	Leu	Gly	Ile	Trp	Leu	Ser	Ser	Pro	Phe	Pro	Asp	Cys	Cys	Ile
	35					40						45			

Ala	Phe	Xaa	Phe	Ala	Tyr	Ser	Ser	Ser	Pro	Leu	Ser	Ser	Gly	Asp	Thr
	50					55					60				

Phe	Gln	Gly	Pro	Gln
65				

&lt;210&gt; 170

&lt;211&gt; 135

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (33)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (129)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 170

Ala Lys Met Pro Trp Thr Cys Ser Val Ser Asp Pro Thr Ser Cys Asp

1                      5                      10                      15  
 Ser Gln Ala Gln Lys Met Pro Gly Val Arg Ala Ser Arg Gln Pro Gly  
                     20                      25                      30  
 Xaa Gly Arg Gln Cys Leu Leu Leu Leu His Gln Val Gln Gly Ile Trp  
                     35                      40                      45  
 Leu Lys Ala Cys Ile Phe Pro Gly His Lys Leu Pro Glu Pro Leu Lys  
                     50                      55                      60  
 Trp Glu Ala Arg Gln Phe Gln Thr Asn Leu Phe Ser Thr His His Ser  
                     65                      70                      75                      80  
 Thr Phe Lys Val Cys Leu Leu Leu Leu Pro Val His Pro Pro Ser Leu  
                     85                      90                      95  
 Gln Phe Phe His Ser Leu Thr Ser Glu Arg Val Pro Gly Gly Ser Met  
                     100                      105                      110  
 Val Asn Lys Leu Thr Cys Met Leu Gln Lys Lys Lys Lys Lys Lys Ile  
                     115                      120                      125  
 Xaa Ala Val Arg Lys Gly Ile  
                     130                      135

<210> 171  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 171  
 Met Leu Leu Leu Val Val Thr Leu Val Asn Leu Ser Ile Tyr Lys Leu  
                     1                      5                      10                      15  
 Ile Lys Leu Val Thr Ala Leu Ser Lys Lys Leu Gly Ala Lys Gly Val  
                     20                      25                      30  
 Leu Lys Asn Ala His Phe Met Arg Cys Asn Cys Gly Glu Met Arg Thr  
                     35                      40                      45  
 Arg Ser  
                     50

<210> 172  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens

<400> 172  
 Met Ala Thr Thr Gly Thr Lys Pro Thr Ser Cys Trp Cys Trp Phe Leu  
                     1                      5                      10                      15  
 Leu Ala Met Cys Trp Phe Val Gln Leu Arg Thr Glu Trp Glu Arg Ala  
                     20                      25                      30

Phe Leu Phe Val Pro Ile Ala Arg Glu Pro Gly Arg Leu Cys Arg Phe  
           35                                  40                                  45

Ser Gly Asn Lys Gln Leu Asn Gly Leu Ala Val Ala Leu Gln Ala Phe  
           50                                  55                                  60

Arg Phe Ala Lys Asn Lys Thr Ser Gln Lys Arg Cys Ala  
       65                                  70                                  75

<210> 173

<211> 77

<212> PRT

<213> Homo sapiens

<400> 173

Met Ala Thr Thr Gly Thr Lys Pro Thr Ser Cys Trp Cys Trp Phe Leu  
       1                                  5                                  10                                  15

Leu Ala Met Cys Trp Phe Val Gln Leu Arg Thr Glu Trp Glu Arg Ala  
           20                                  25                                  30

Phe Leu Phe Val Pro Ile Ala Arg Glu Pro Gly Arg Leu Cys Arg Phe  
           35                                  40                                  45

Ser Gly Asn Lys Gln Leu Asn Gly Leu Ala Val Ala Leu Gln Ala Phe  
           50                                  55                                  60

Arg Phe Ala Lys Asn Lys Thr Ser Gln Lys Arg Cys Ala  
       65                                  70                                  75

<210> 174

<211> 56

<212> PRT

<213> Homo sapiens

<400> 174

Cys Asp Val Lys Pro Ala Asp Val Lys Asp Ile Gly Gly Thr Val Glu  
       1                                  5                                  10                                  15

Ala Ser Cys Met Asn Phe Ser Trp Pro Ala Pro Thr Ala Gln Val His  
           20                                  25                                  30

Thr Arg Lys Arg Arg Val Trp Ala Cys Leu Arg Val Asp Val Ser Ser  
           35                                  40                                  45

Glu Val Arg Pro Gly Lys Ala Leu  
       50                                  55

<210> 175

<211> 68

<212> PRT

<213> Homo sapiens

<220>



<221> SITE  
 <222> (44)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (57)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 175  
 Met Ala Gln Ser Arg Val Leu Leu Leu Leu Leu Leu Leu Pro Pro Gln  
           1                          5                          10                          15  
 Leu Ala Pro Gly Thr Cys Ala Cys Arg Glu Gly Pro Arg Ile Trp Pro  
                           20                          25                          30  
 Asn Gly Gly His Ser Leu Ser Pro Glu Glu Asn Xaa Leu Arg Lys Lys  
                           35                          40                          45  
 Ser Arg Leu Leu Leu Ile Glu Ala Xaa Lys Lys Pro Gly Ala Trp Ala  
           50                          55                          60  
 Gln Ala Ala Val  
       65

<210> 176  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (26)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 176  
 Met Ala Gln Ser Arg Val Leu Leu Leu Leu Leu Leu Leu Pro Pro Gln  
           1                          5                          10                          15  
 Leu His Leu Gly Pro Val Leu Ala Val Xaa Ala Pro Gly Phe Gly Arg  
                           20                          25                          30  
 Ser Gly Gly His Ser Leu Ser Pro Glu Glu Asn Glu Phe Ala Glu Glu  
                           35                          40                          45  
 Glu Pro Val Leu Val Leu Ser Pro Glu Glu Pro Gly Pro Gly Pro Ala  
           50                          55                          60  
 Ala Val Ser Cys Pro Arg Asp Cys Ala Cys Ser Gln Glu Gly Val Val  
           65                          70                          75                          80  
 Asp Cys Gly Gly Tyr  
                           85

<210> 177  
 <211> 14

<212> PRT  
 <213> Homo sapiens

<400> 177  
 Met Ile Tyr Gln Ile Tyr Gly Ile Ile Cys Ser Leu Phe Pro  
           1                          5                          10

<210> 178  
 <211> 31  
 <212> PRT  
 <213> Homo sapiens

<400> 178  
 Gly Pro Phe Cys Asp Val Thr Thr Leu His Leu Pro Gly Leu Leu Cys  
           1                          5                          10                          15  
 Thr Gln Cys Ser Leu Asp Pro Val Asp Leu Tyr Leu Trp Arg Ser  
                           20                          25                          30

<210> 179  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<400> 179  
 Met Ile Tyr Gln Ile Tyr Gly Ile Ile Cys Ser Leu Phe Pro  
           1                          5                          10

<210> 180  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (71)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 180  
 Thr Met Gly Pro Gly Asp Arg His Arg Leu Pro Val Tyr Leu Gly His  
           1                          5                          10                          15  
 Cys Leu Gly Cys Leu Glu Ser Gly Leu Leu Ala Gln Ile Leu Pro Leu  
                           20                          25                          30  
 Leu Gly Gln Gly Arg Pro Phe Met Asp Ser Leu Ile Arg Val Ala Ala  
           35                          40                          45  
 Glu Arg Arg Ala Gly Gln Val Leu Lys Gly Thr Leu Lys Arg Phe Ser  
           50                          55                          60  
 Glu Arg Gln Gly Arg Arg Xaa  
           65                          70

<210> 181  
 <211> 204  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (1)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (5)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (8)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 181  
 Xaa Pro Ser Leu Xaa Gly Thr Xaa Ala Gly Gly Ser Thr Ala Val Ala  
     1                    5                    10                    15  
 Ala Ala Leu Glu Leu Val Asp Pro Pro Gly Cys Arg Asn Ser Ala Arg  
                     20                    25                    30  
 Ala Ala Ala Glu Leu Ser Leu Leu Glu Lys Ser Leu Gly Leu Ser Lys  
                     35                    40                    45  
 Gly Asn Lys Tyr Ser Ala Gln Gly Glu Arg Gln Ile Pro Val Leu Gln  
     50                    55                    60  
 Thr Asn Asn Gly Pro Ser Leu Thr Gly Leu Thr Thr Ile Ala Ala His  
     65                    70                    75                    80  
 Leu Val Lys Gln Ala Asn Lys Glu Tyr Leu Leu Gly Ser Thr Ala Glu  
                     85                    90                    95  
 Glu Lys Ala Ile Val Gln Gln Trp Leu Glu Tyr Arg Val Thr Gln Val  
                     100                    105                    110  
 Asp Gly His Ser Ser Lys Asn Asp Ile His Thr Leu Leu Lys Asp Leu  
     115                    120                    125  
 Asn Ser Tyr Leu Glu Asp Lys Val Tyr Leu Thr Gly Tyr Asn Phe Thr  
     130                    135                    140  
 Leu Ala Asp Ile Leu Leu Tyr Tyr Gly Leu His Arg Phe Ile Val Asp  
     145                    150                    155                    160  
 Leu Thr Val Gln Glu Lys Glu Lys Tyr Leu Asn Val Ser Arg Trp Phe  
                     165                    170                    175  
 Cys His Ile Gln His Tyr Pro Gly Ile Arg Gln His Leu Ser Ser Val  
                     180                    185                    190  
 Val Phe Ile Lys Asn Arg Leu Tyr Thr Asn Ser His

195

200

<210> 182  
<211> 54  
<212> PRT  
<213> Homo sapiens

<400> 182  
Met Thr Ser Pro Leu Ala Arg Leu Leu Leu Pro Phe Trp Cys His Thr  
1 5 10 15  
Leu Gly Thr Met Ala Leu Gly Thr Pro Asn Pro Gly Ala Met Ala Trp  
20 25 30  
Gly Ala Val Gly Glu Pro Asn Pro Gly Ala Trp Thr Val Pro Leu Gly  
35 40 45  
Ala Phe Leu Ala Gly Arg  
50

<210> 183  
<211> 54  
<212> PRT  
<213> Homo sapiens

<400> 183  
Met Thr Ser Pro Leu Ala Arg Leu Leu Leu Pro Phe Trp Cys His Thr  
1 5 10 15  
Leu Gly Thr Met Ala Leu Gly Thr Pro Asn Pro Gly Ala Met Ala Trp  
20 25 30  
Gly Ala Val Gly Glu Pro Asn Pro Gly Ala Trp Thr Val Pro Leu Gly  
35 40 45  
Ala Phe Leu Ala Gly Arg  
50

<210> 184  
<211> 1  
<212> PRT  
<213> Homo sapiens

<400> 184  
Ser  
1

<210> 185  
<211> 3  
<212> PRT  
<213> Homo sapiens

<400> 185  
Leu Leu Cys  
1

<210> 186  
<211> 1  
<212> PRT  
<213> Homo sapiens

<400> 186  
Ser  
1

<210> 187  
<211> 5  
<212> PRT  
<213> Homo sapiens

<400> 187  
Ala Gly Thr Trp Ser  
1 5

<210> 188  
<211> 45  
<212> PRT  
<213> Homo sapiens

<400> 188  
Met Ala Gly Val Trp Asn Thr Ile Ala Leu Trp Phe Leu Ser Val Phe  
1 5 10 15  
Gly Val Ile Ser Ala Pro Thr Thr Gly Thr Ser Pro Thr Ser Cys Arg  
20 25 30  
Cys Val Gly Pro Arg Pro Pro Gly Cys Gly Pro Ala Gly  
35 40 45

<210> 189  
<211> 46  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (21)  
<223> Xaa equals any of the naturally occurring L-amino acids.

<400> 189  
Leu Ile Asn Val Thr Asn Val Gly Ile Ile Leu Ala Val Ser Gln Pro  
1 5 10 15

Leu Asp Asp Ile Xaa Glu Phe Ile Ile Glu Lys Arg Ser Asp Tyr Asn

20 25 30  
 Lys Tyr Arg Lys Glu Asn Met Trp Leu Pro Leu Asn Pro Tyr  
 35 40 45  
  
 <210> 190  
 <211> 304  
 <212> PRT  
 <213> Homo sapiens  
  
 <220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (30)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (32)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (187)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 190  
 Met Leu Gln Phe Gln Arg Thr Trp Lys Tyr Lys Gly Glu Phe Xaa Leu  
 1 5 10 15  
 His Gln Gly Asn Ala Glu Arg His Phe Met Gln Val Thr Xaa Val Xaa  
 20 25 30  
 Glu Ile Ser Thr Gly Lys Arg Asp Asn Glu Phe Ser Asn Ser Gly Arg  
 35 40 45  
 Ser Ile Pro Leu Lys Ser Val Phe Leu Thr Gln Gln Lys Val Pro Thr  
 50 55 60  
 Ile Gln Gln Val His Lys Phe Asp Ile Tyr Asp Lys Leu Phe Pro Gln  
 65 70 75 80  
 Asn Ser Val Ile Ile Glu Tyr Lys Arg Leu His Ala Glu Lys Glu Ser  
 85 90 95  
 Leu Ile Gly Asn Glu Cys Glu Glu Phe Asn Gln Ser Thr Tyr Leu Ser  
 100 105 110  
 Lys Asp Ile Gly Ile Pro Pro Gly Glu Lys Pro Tyr Glu Ser His Asp  
 115 120 125  
 Phe Ser Lys Leu Leu Ser Phe His Ser Leu Phe Thr Gln His Gln Thr  
 130 135 140

Thr His Phe Gly Lys Leu Pro His Gly Tyr Asp Glu Cys Gly Asp Ala  
 145 150 155 160  
 Phe Ser Cys Tyr Ser Phe Phe Thr Gln Pro Gln Arg Ile His Ser Gly  
 165 170 175  
 Glu Lys Pro Tyr Ala Cys Asn Asp Cys Gly Xaa Ala Phe Ser Pro Thr  
 180 185 190  
 Ser Phe Ser Val Asn Ile Lys Glu Leu Ile Leu Gly Arg Asn Leu Met  
 195 200 205  
 Asn Val Arg Asn Val Thr Lys Leu Ser Asp Arg Val Leu Thr Leu Leu  
 210 215 220  
 Asn Ile Arg Gly Ser Thr Leu Glu Arg Asn Arg Leu Arg Ala Met Asn  
 225 230 235 240  
 Val Gly Arg Pro Leu Ala Val Met Pro Ser Leu Leu Asn Ile Arg Glu  
 245 250 255  
 Phe Thr Gln Val Arg Asn His Met Asn Val Lys Asn Val Ile Lys Pro  
 260 265 270  
 Ser Asp Arg Val Leu Thr Leu Ile Asn Ile Arg Gly Phe Thr Leu Glu  
 275 280 285  
 Arg Asn Pro Met Asn Val Ile Ser Val Glu Lys Pro Ser Ala Asp Ala  
 290 295 300

<210> 191  
 <211> 336  
 <212> PRT  
 <213> Homo sapiens

<400> 191  
 Met Asp Thr Met Asn Val Val Met Pro Leu Ala Val Thr His Ser Leu  
 1 5 10 15  
 Leu Asn Leu Arg Glu Phe Thr Val Val Glu Lys Pro Tyr Ala Cys Asn  
 20 25 30  
 Asp Cys Gly Lys Ala Phe Ser His Asp Phe Phe Leu Ser Glu His Gln  
 35 40 45  
 Arg Thr His Ile Gly Glu Lys Pro Tyr Glu Cys Lys Glu Cys Asn Lys  
 50 55 60  
 Ala Phe Arg Gln Ser Ala His Leu Ala Gln His Gln Arg Ile His Thr  
 65 70 75 80  
 Gly Glu Lys Pro Phe Ala Cys Asn Glu Cys Gly Lys Ala Phe Ser Arg  
 85 90 95  
 Tyr Ala Phe Leu Val Glu His Gln Arg Ile His Thr Gly Glu Lys Pro

100	105	110
Tyr Glu Cys Lys Glu Cys Asn Lys Ala Phe Arg Gln Ser Ala His Leu		
115	120	125
Asn Gln His Gln Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Asn		
130	135	140
Gln Cys Gly Lys Ala Phe Ser Arg Arg Ile Ala Leu Thr Leu His Gln		
145	150	155
Arg Ile His Thr Gly Glu Lys Pro Phe Lys Cys Ser Glu Cys Gly Lys		
165	170	175
Thr Phe Gly Tyr Arg Ser His Leu Asn Gln His Gln Arg Ile His Thr		
180	185	190
Gly Glu Lys Pro Tyr Glu Cys Ile Lys Cys Gly Lys Phe Phe Arg Thr		
195	200	205
Asp Ser Gln Leu Asn Arg His His Arg Ile His Thr Gly Glu Arg Pro		
210	215	220
Phe Glu Cys Ser Lys Cys Gly Lys Ala Phe Ser Asp Ala Leu Val Leu		
225	230	235
Ile His His Lys Arg Ser His Ala Gly Glu Lys Pro Tyr Glu Cys Asn		
245	250	255
Lys Cys Gly Lys Ala Phe Ser Cys Gly Ser Tyr Leu Asn Gln His Gln		
260	265	270
Arg Ile His Thr Gly Glu Lys Pro Tyr Glu Cys Ser Glu Cys Gly Lys		
275	280	285
Ala Phe His Gln Ile Leu Ser Leu Arg Leu His Gln Arg Ile His Ala		
290	295	300
Gly Glu Lys Pro Tyr Lys Cys Asn Glu Cys Gly Asn Asn Phe Ser Cys		
305	310	315
Val Ser Ala Leu Arg Arg His Gln Arg Ile His Asn Arg Glu Thr Leu		
325	330	335

&lt;210&gt; 192

&lt;211&gt; 54

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 192

Leu	Ala	Ala	Thr	Arg	Lys	Phe	Phe	Leu	Ser	Ser	His	Ser	Ser	Ser	Cys
1				5					10					15	

Lys	Lys	Gly	Ala	Met	Ser	Gln	Lys	Glu	Ala	Pro	Phe	His	Arg	Gln	Arg
			20					25					30		



Leu His Arg Glu Arg Gly Asn Arg Arg Leu Gly Asn Gly Gly Glu Trp  
 35 40 45

Gly Arg Asn Trp Val Gln  
 50

<210> 193  
 <211> 27  
 <212> PRT  
 <213> Homo sapiens

<400> 193  
 Met His Gln Leu Phe Gly Leu Phe Val Thr Leu Met Phe Ala Ser Val  
 1 5 10 15  
 Gly Gly Gly Leu Gly Gly Ile Ile Leu Val Leu  
 20 25

<210> 194  
 <211> 106  
 <212> PRT  
 <213> Homo sapiens

<400> 194  
 Met Pro Gly Val Leu Gly Ala Leu Leu Gly Val Leu Val Ala Gly Leu  
 1 5 10 15  
 Ala Thr His Glu Ala Tyr Gly Asp Gly Leu Glu Ser Val Phe Pro Leu  
 20 25 30  
 Ile Ala Glu Gly Gln Arg Ser Ala Thr Ser Gln Ala Met His Gln Leu  
 35 40 45  
 Phe Gly Leu Phe Val Thr Leu Met Phe Ala Ser Val Gly Gly Gly Leu  
 50 55 60  
 Gly Gly Ile Ile Leu Val Leu Cys Leu Leu Asp Pro Cys Ala Leu Trp  
 65 70 75 80  
 His Trp Val Ala Pro Ser Ser Met Val Gly Gly Arg Glu Ala Ser Gln  
 85 90 95  
 Ile Leu Pro Tyr His His Gln Gly Ser Cys  
 100 105

<210> 195  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (3)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (17)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 195

Asn Leu Xaa Cys Cys Glu Pro Leu Lys Gly Thr Glu Ile Val His Leu  
1 5 10 15

Xaa Ser Ser Asp Phe Lys Ala Val Ala Cys Arg Cys Ser Gln Leu Asn  
20 25 30

Lys Ala Leu Pro Ser Thr Thr Leu Arg Gly Phe Val Cys Gly Ser Ser  
35 40 45

Cys Tyr Ile Ser Trp Phe Pro Asn Gln Glu Thr Arg  
50 55 60

<210> 196

<211> 82

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (26)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (28)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 196

Pro Gly Asn Glu Val Thr Asp Gly Gln Pro Arg Gln Pro Leu Arg Arg  
1 5 10 15

Leu Arg Leu Pro Cys Gly Ala Ser Leu Xaa Arg Xaa Pro Ala Ser Pro  
20 25 30

Ser Asp Ala Ile Gln Arg Ala Leu Pro Gly Arg Lys Leu Pro Arg Trp  
35 40 45

Asn Ala Ser Pro Glu Gln Arg Val Ala Val Pro Cys Gly Gly Leu Thr  
50 55 60

Gln Trp Leu Asn Thr Gly Lys Glu Leu Ala Leu Gly Val Arg Thr Ser  
65 70 75 80

Glu Thr

<210> 197

<211> 94

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (2)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 197

Arg Xaa Pro Ile Phe Ile Gly Glu Asn Phe Tyr Pro Pro Val Arg Gly  
 1 5 10 15

Arg Val Gly Met Ser Ala Cys Gln Gly Gly Gly Gly Gly Gly Gly  
 20 25 30

Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly Gly  
 35 40 45

Gly Gly Gly Gly Val Asp Lys Leu Pro Cys Leu Thr Met Cys Trp Cys  
 50 55 60

Gly Asn Gly Ala Gln Pro Ala Arg Leu Lys Val Asp Gly Ile Pro Thr  
 65 70 75 80

Gly Gln Arg Lys Ser Tyr Ala Asp Thr Pro Ala Trp Pro Gly  
 85 90

&lt;210&gt; 198

&lt;211&gt; 257

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (27)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 198

Met Thr Ala Ala Val Phe Phe Gly Cys Ala Phe Ile Ala Phe Gly Pro  
 1 5 10 15

Ala Leu Ala Leu Tyr Val Phe Thr Ile Ala Xaa Glu Pro Leu Arg Ile  
 20 25 30

Ile Phe Leu Ile Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Ile  
 35 40 45

Ser Ser Leu Val Trp Phe Met Ala Arg Val Ile Ile Asp Asn Lys Asp  
 50 55 60

Gly Pro Thr Gln Lys Tyr Leu Leu Ile Phe Gly Ala Phe Val Ser Val  
 65 70 75 80

Tyr Ile Gln Glu Met Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys  
 85 90 95

Ala Ser Glu Gly Leu Lys Ser Ile Asn Pro Gly Glu Thr Ala Pro Ser  
 100 105 110

Met Arg Leu Leu Ala Tyr Val Ser Gly Leu Gly Phe Gly Ile Met Ser  
 115 120 125

Gly Val Phe Ser Phe Val Asn Thr Leu Ser Asp Ser Leu Gly Pro Gly  
 130 135 140

Thr Val Gly Ile His Gly Asp Ser Pro Gln Phe Phe Leu Tyr Ser Ala  
 145 150 155 160

Phe Met Thr Leu Val Ile Ile Leu Leu His Val Phe Trp Gly Ile Val  
 165 170 175

Phe Phe Asp Gly Cys Glu Lys Lys Lys Trp Gly Ile Leu Leu Ile Val  
 180 185 190

Leu Leu Thr His Leu Leu Val Ser Ala Gln Thr Phe Ile Ser Ser Tyr  
 195 200 205

Tyr Gly Ile Asn Leu Ala Ser Ala Phe Ile Ile Leu Val Leu Met Gly  
 210 215 220

Thr Trp Ala Phe Leu Ala Ala Gly Gly Ser Cys Arg Ser Leu Lys Leu  
 225 230 235 240

Cys Leu Leu Cys Gln Asp Lys Asn Phe Leu Leu Tyr Asn Gln Arg Ser  
 245 250 255

Arg

<210> 199  
 <211> 257  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 199

Met Thr Ala Ala Val Phe Phe Gly Cys Ala Phe Ile Ala Phe Gly Pro  
 1 5 10 15

Ala Leu Ala Leu Tyr Val Phe Thr Ile Ala Ile Glu Pro Leu Arg Ile  
 20 25 30

Ile Phe Leu Ile Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Ile  
 35 40 45

Ser Ser Leu Val Trp Phe Met Ala Arg Val Ile Ile Asp Asn Lys Asp  
 50 55 60

Gly Pro Thr Gln Lys Tyr Leu Leu Ile Phe Gly Ala Phe Val Ser Val  
 65 70 75 80

Tyr Ile Gln Glu Met Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys  
 85 90 95

Ala Ser Glu Gly Leu Lys Ser Ile Asn Pro Gly Glu Thr Ala Pro Ser  
 100 105 110

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Met Arg Leu Leu Ala Tyr Val Ser Gly Leu Gly Phe Gly Ile Met Ser
      115                      120                      125

Gly Val Phe Ser Phe Val Asn Thr Leu Ser Asp Ser Leu Gly Pro Gly
      130                      135                      140

Thr Val Gly Ile His Gly Asp Ser Pro Gln Phe Phe Leu Tyr Ser Ala
145                      150                      155                      160

Phe Met Thr Leu Val Ile Ile Leu Leu His Val Phe Trp Gly Ile Val
      165                      170                      175

Phe Phe Asp Gly Cys Glu Lys Lys Lys Trp Gly Ile Leu Leu Ile Val
      180                      185                      190

Leu Leu Thr His Leu Leu Val Ser Ala Gln Thr Phe Ile Ser Ser Tyr
      195                      200                      205

Tyr Gly Ile Asn Leu Ala Ser Ala Phe Ile Ile Leu Val Leu Met Gly
      210                      215                      220

Thr Trp Ala Phe Leu Ala Ala Gly Gly Ser Cys Arg Ser Leu Lys Leu
225                      230                      235                      240

Cys Leu Leu Cys Gln Asp Lys Asn Phe Leu Leu Tyr Asn Gln Arg Ser
      245                      250                      255

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Arg

<210> 200  
 <211> 36  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (8)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (12)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (16)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (18)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (19)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (23)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 200

Trp	Arg	His	Leu	Thr	Val	Ser	Xaa	Gly	Leu	Gln	Xaa	Arg	Leu	Ser	Xaa
1				5					10					15	
Arg	Xaa	Xaa	Trp	Glu	Gly	Xaa	Pro	Arg	Ser	Thr	Thr	Ala	Ala	Gly	Trp
			20					25						30	
Gly	Arg	Thr	Gly												
			35												

<210> 201

<211> 21

<212> PRT

<213> Homo sapiens

<400> 201

His	Leu	Ser	Leu	Pro	Arg	Leu	Leu	Trp	Thr	Leu	Gln	Ile	Pro	Gln	Cys
1				5					10					15	
Pro	Gln	Leu	Gln	Asp											
			20												

<210> 202

<211> 78

<212> PRT

<213> Homo sapiens

<400> 202

Asp	Pro	Gln	Asn	Ile	Tyr	Trp	Glu	His	Leu	Ser	Ile	Arg	Gly	Phe	Ile
1				5					10					15	
Trp	Trp	Leu	Arg	Cys	Leu	Val	Ile	Asn	Val	Val	Leu	Phe	Ile	Leu	Leu
			20					25					30		
Phe	Phe	Leu	Thr	Thr	Pro	Ala	Ile	Ile	Ile	Thr	Thr	Met	Asp	Lys	Phe
		35					40					45			
Asn	Val	Thr	Lys	Pro	Val	Glu	Tyr	Leu	Asn	Val	Arg	Pro	His	Ala	Pro
		50				55					60				
Val	Thr	Phe	His	Ala	Gly	Ser	Gln	His	Thr	Asp	Thr	Arg	Pro		
		65			70					75					

<210> 203

<211> 318

<212> PRT

<213> Homo sapiens

&lt;400&gt; 203

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Met His Lys Cys Tyr Thr Phe Leu Ile Phe Met Val Leu Leu Leu Pro
 1          5          10          15

Ser Leu Gly Leu Ser Ser Leu Asp Leu Phe Phe Arg Trp Leu Phe Asp
          20          25          30

Lys Lys Phe Leu Ala Glu Ala Ala Ile Arg Phe Glu Cys Val Phe Leu
          35          40          45

Pro Asp Asn Gly Ala Phe Phe Val Asn Tyr Val Ile Ala Ser Ala Phe
          50          55          60

Ile Gly Asn Ala Met Asp Leu Leu Arg Ile Pro Gly Leu Leu Met Tyr
          65          70          75          80

Met Ile Arg Leu Cys Leu Ala Arg Ser Ala Ala Glu Arg Arg Asn Val
          85          90          95

Lys Arg His Gln Ala Tyr Glu Phe Arg Phe Gly Ala Ala Tyr Ala Trp
          100          105          110

Met Met Cys Val Phe Thr Val Val Met Thr Tyr Ser Ile Thr Cys Pro
          115          120          125

Ile Ile Val Pro Phe Gly Leu Met Tyr Met Leu Leu Lys His Leu Val
          130          135          140

Asp Arg Tyr Asn Leu Tyr Tyr Ala Tyr Leu Pro Ala Lys Leu Asp Lys
          145          150          155          160

Lys Ile His Ser Gly Ala Val Asn Gln Val Val Ala Ala Pro Ile Leu
          165          170          175

Cys Leu Phe Trp Leu Leu Phe Phe Ser Thr Met Arg Thr Gly Phe Leu
          180          185          190

Ala Pro Thr Ser Met Phe Thr Phe Val Val Leu Val Ile Thr Ile Val
          195          200          205

Ile Cys Leu Cys His Val Cys Phe Gly His Phe Lys Tyr Leu Ser Ala
          210          215          220

His Asn Tyr Lys Ile Glu His Thr Glu Thr Asp Thr Val Asp Pro Arg
          225          230          235          240

Ser Asn Gly Arg Pro Pro Thr Ala Ala Ala Val Pro Lys Ser Ala Lys
          245          250          255

Tyr Ile Ala Gln Val Leu Gln Asp Ser Glu Val Asp Gly Asp Gly Asp
          260          265          270

Gly Ala Pro Gly Ser Ser Gly Asp Glu Pro Pro Ser Ser Ser Ser Gln
          275          280          285

Asp Glu Glu Leu Leu Met Pro Pro Asp Ala Leu Thr Asp Thr Asp Phe
          290          295          300

Gln Ser Cys Glu Asp Ser Leu Ile Glu Asn Glu Ile His Gln

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305

310

315

<210> 204  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (9)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (21)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 204  
 Val Val Val Glu Leu Ile Asn Arg Xaa Gln Asn Tyr Phe Gln Tyr Ile  
           1                  5                  10                  15  
 Val Tyr Leu Tyr Xaa Lys Arg Asp Gly Pro Phe Tyr Gly Gly Thr Leu  
                   20                  25                  30  
 Ser Met Val Val Phe Cys Asp Val Leu Phe Leu Leu Leu Leu Phe Ala  
                   35                  40                  45  
 Leu Phe Ser Pro Ile Thr Ala Leu Leu Ser Leu Lys Arg Ile Asn Phe  
           50                  55                  60  
 Ile  
   65

<210> 205  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 205  
 Ala Gln Glu Leu Arg Pro Ala Trp Glu Thr Trp Gln Gly Pro Ile Ser  
           1                  5                  10                  15  
 Thr Glu Thr Thr Glu Asn Trp Val Gly Met Val Ala Arg Val Pro Ala  
                   20                  25                  30  
 Ala Gln Glu Ala Glu Val Gly Gly Ser Leu Glu Pro Arg Arg Leu Arg  
           35                  40                  45  
 Leu Gln  
   50

<210> 206  
 <211> 90  
 <212> PRT



&lt;213&gt; Homo sapiens

&lt;400&gt; 206

Asp Leu Thr Cys Leu Leu Ser Ser Asn Phe Ile Ile Gly Ile Asn Val  
 1 5 10 15  
 His Phe Phe Pro Val Pro Val Ser Glu Ala Phe Ile Cys Val Cys Met  
 20 25 30  
 Cys Val Leu Asn Lys Cys Ile Arg Tyr Leu Lys Asn Ser Asn Leu Asn  
 35 40 45  
 Leu Asn Asn Leu Lys Asn Glu Ile Val Ile Leu Cys Val Lys Val Ser  
 50 55 60  
 Asp Val Leu Tyr Ser Ala Leu Lys Thr Ile Phe Ile Tyr Ser Ser Thr  
 65 70 75 80  
 Asp Thr Lys Tyr Ile Leu Lys Leu Leu Ser  
 85 90

&lt;210&gt; 207

&lt;211&gt; 41

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 207

Met Ser Cys Leu Trp Ala Gly Ile Lys Phe Leu Gly Phe Gly Phe Cys  
 1 5 10 15  
 Trp Met Asp Cys Ser Leu Cys Glu Pro Ile Trp Val Cys Gln Ile Gln  
 20 25 30  
 Ser Leu Gly Cys His Gly Asn Leu Ala  
 35 40

&lt;210&gt; 208

&lt;211&gt; 103

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 208

Ser Leu Asp Thr Ala Leu Leu Ser Thr Leu Cys Ser Leu Ala Phe Thr  
 1 5 10 15  
 Ala Ala Ser Thr Ser Ser Thr Val Ala Tyr Val Thr Asn Pro Lys Pro  
 20 25 30  
 Leu Glu His Leu Val Phe Gly Ser Leu Ile Thr Thr Val Cys Glu Cys  
 35 40 45  
 Ser Leu Leu Leu Arg Met Ala His Trp Thr Leu Thr Gly His Phe Lys  
 50 55 60  
 Ala Gln Leu Ser Asp Glu Glu Leu Leu Gln Leu Leu Gly Leu Leu Lys  
 65 70 75 80

Arg Leu Cys Leu Arg His Asp Ser Ser Gly Lys Arg Asp Phe Asn Asp  
                     85                    90                    95

Val Phe Ser Gly Ile His Gly  
                     100

<210> 209

<211> 49

<212> PRT

<213> Homo sapiens

<400> 209

Met Arg Gln Thr Lys Leu Glu Gly Trp Leu Ile Phe Pro Leu Phe Ser  
   1                    5                    10                    15

Cys Phe Ser Phe Ile Ser Leu Gly Ser Asp Glu Gly Pro Glu Ile Phe  
                     20                    25                    30

Ile Ser His Leu Lys Ser Leu Ala Asp Tyr Ser Arg Ala Leu Val Glu  
                     35                    40                    45

Val

<210> 210

<211> 49

<212> PRT

<213> Homo sapiens

<400> 210

Met Arg Gln Thr Lys Leu Glu Gly Trp Leu Ile Phe Pro Leu Phe Ser  
   1                    5                    10                    15

Cys Phe Ser Phe Ile Ser Leu Gly Ser Asp Glu Gly Pro Glu Ile Phe  
                     20                    25                    30

Ile Ser His Leu Lys Ser Leu Ala Asp Tyr Ser Arg Ala Leu Val Glu  
                     35                    40                    45

Val

<210> 211

<211> 489

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (79)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

&lt;221&gt; SITE

&lt;222&gt; (321)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 211

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Met Pro Gln Ala Ser Glu His Arg Leu Gly Arg Thr Arg Glu Pro Pro
 1           5           10           15

Val Asn Ile Gln Pro Arg Val Gly Ser Lys Leu Pro Phe Ala Pro Arg
          20           25           30

Ala Arg Ser Lys Glu Arg Arg Asn Pro Ala Ser Gly Pro Asn Pro Met
 35           40           45

Leu Arg Pro Leu Pro Pro Arg Pro Gly Leu Pro Asp Glu Arg Leu Lys
 50           55           60

Lys Leu Glu Leu Gly Arg Gly Arg Thr Ser Gly Pro Arg Pro Xaa Gly
 65           70           75           80

Pro Leu Arg Ala Asp His Gly Val Pro Leu Pro Gly Ser Pro Pro Pro
          85           90           95

Thr Val Ala Leu Pro Leu Pro Ser Arg Thr Asn Leu Ala Arg Ser Lys
          100          105          110

Ser Val Ser Ser Gly Asp Leu Arg Pro Met Gly Ile Ala Leu Gly Gly
          115          120          125

His Arg Gly Thr Gly Glu Leu Gly Ala Ala Leu Ser Arg Leu Ala Leu
          130          135          140

Arg Pro Glu Pro Pro Thr Leu Arg Arg Ser Thr Ser Leu Arg Arg Leu
          145          150          155          160

Gly Gly Phe Pro Gly Pro Pro Thr Leu Phe Ser Ile Arg Thr Glu Pro
          165          170          175

Pro Ala Ser His Gly Ser Phe His Met Ile Ser Ala Arg Ser Ser Glu
          180          185          190

Pro Phe Tyr Ser Asp Asp Lys Met Ala His His Thr Leu Leu Leu Gly
          195          200          205

Ser Gly His Val Gly Leu Arg Asn Leu Gly Asn Thr Cys Phe Leu Asn
          210          215          220

Ala Val Leu Gln Cys Leu Ser Ser Thr Arg Pro Leu Arg Asp Phe Cys
          225          230          235          240

Leu Arg Arg Asp Phe Arg Gln Glu Val Pro Gly Gly Gly Arg Ala Gln
          245          250          255

Glu Leu Thr Glu Ala Phe Ala Asp Val Ile Gly Ala Leu Trp His Pro
          260          265          270

Asp Ser Cys Glu Ala Val Asn Pro Thr Arg Phe Arg Ala Val Phe Gln
          275          280          285

Lys Tyr Val Pro Ser Phe Ser Gly Tyr Ser Gln Gln Asp Ala Gln Glu

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290                      295                      300  
 Phe Leu Lys Leu Leu Met Glu Arg Leu His Leu Glu Ile Asn Arg Arg  
 305                      310                      315                      320  
 Xaa Arg Arg Ala Pro Pro Ile Leu Ala Asn Gly Pro Val Pro Ser Pro  
                          325                      330                      335  
 Pro Arg Arg Gly Gly Ala Leu Leu Glu Glu Pro Glu Leu Ser Asp Asp  
                          340                      345                      350  
 Asp Arg Ala Asn Leu Met Trp Lys Arg Tyr Leu Glu Arg Glu Asp Ser  
                          355                      360                      365  
 Lys Ile Val Asp Leu Phe Val Gly Gln Leu Lys Ser Cys Leu Lys Cys  
                          370                      375                      380  
 Gln Ala Cys Gly Tyr Arg Ser Thr Thr Phe Glu Val Phe Cys Asp Leu  
 385                      390                      395                      400  
 Ser Leu Pro Ile Pro Lys Lys Gly Phe Ala Gly Gly Lys Val Ser Leu  
                          405                      410                      415  
 Arg Asp Cys Phe Asn Leu Phe Thr Lys Glu Glu Glu Leu Glu Ser Glu  
                          420                      425                      430  
 Asn Ala Pro Val Cys Asp Arg Cys Arg Gln Lys Thr Arg Ser Thr Lys  
                          435                      440                      445  
 Lys Leu Thr Val Gln Arg Phe Pro Arg Ile Leu Val Leu His Leu Asn  
                          450                      455                      460  
 Arg Phe Ser Ala Ser Arg Gly Ser Ile Lys Lys Ser Ser Val Gly Val  
 465                      470                      475                      480  
 Asp Phe Ser Thr Ala Ala Thr Glu Pro  
                          485

<210> 212  
 <211> 463  
 <212> PRT  
 <213> Homo sapiens

<400> 212  
 Ala Arg Gly Thr Asn Leu Ala Arg Ser Lys Ser Val Ser Ser Gly Asp  
   1                          5                          10                          15  
 Leu Arg Pro Met Gly Ile Ala Leu Gly Gly His Arg Gly Thr Gly Glu  
                           20                          25                          30  
 Leu Gly Ala Ala Leu Ser Arg Leu Ala Leu Arg Pro Glu Pro Pro Thr  
                           35                          40                          45  
 Leu Arg Arg Ser Thr Ser Leu Arg Arg Leu Gly Gly Phe Pro Gly Pro  
                           50                          55                          60  
 Pro Thr Leu Phe Ser Ile Arg Thr Glu Pro Pro Ala Ser His Gly Ser  
                           65                          70                          75                          80

Phe	His	Met	Ile	Ser	Ala	Arg	Ser	Ser	Glu	Pro	Phe	Tyr	Ser	Asp	Asp
				85					90					95	
Lys	Met	Ala	His	His	Thr	Leu	Leu	Leu	Gly	Ser	Gly	His	Val	Gly	Leu
			100					105					110		
Arg	Asn	Leu	Gly	Asn	Thr	Cys	Phe	Leu	Asn	Ala	Val	Leu	Gln	Cys	Leu
		115					120					125			
Ser	Ser	Thr	Arg	Pro	Leu	Arg	Asp	Phe	Cys	Leu	Arg	Arg	Asp	Phe	Arg
		130				135					140				
Gln	Glu	Val	Pro	Gly	Gly	Gly	Arg	Ala	Gln	Glu	Leu	Thr	Glu	Ala	Phe
145					150					155					160
Ala	Asp	Val	Ile	Gly	Ala	Leu	Trp	His	Pro	Asp	Ser	Cys	Glu	Ala	Val
				165					170					175	
Asn	Pro	Thr	Arg	Phe	Arg	Ala	Val	Phe	Gln	Lys	Tyr	Val	Pro	Ser	Phe
			180					185					190		
Ser	Gly	Tyr	Ser	Gln	Leu	Asp	Ala	Gln	Glu	Phe	Leu	Lys	Leu	Leu	Met
		195					200					205			
Glu	Arg	Leu	His	Leu	Glu	Ile	Asn	Arg	Arg	Asp	Arg	Arg	Ala	Pro	Pro
		210				215					220				
Ile	Leu	Ala	Asn	Gly	Pro	Val	Pro	Ser	Pro	Pro	Arg	Arg	Gly	Gly	Ala
225					230					235					240
Leu	Leu	Glu	Glu	Pro	Glu	Leu	Ser	Asp	Asp	Asp	Arg	Ala	Asn	Leu	Met
				245					250					255	
Trp	Lys	Arg	Tyr	Leu	Glu	Arg	Glu	Asp	Ser	Lys	Ile	Val	Asp	Leu	Phe
			260					265					270		
Val	Gly	Gln	Leu	Lys	Ser	Cys	Leu	Lys	Cys	Gln	Ala	Cys	Gly	Tyr	Arg
		275					280					285			
Ser	Thr	Thr	Phe	Glu	Val	Phe	Cys	Asp	Leu	Ser	Leu	Pro	Ile	Pro	Lys
		290				295					300				
Lys	Gly	Phe	Ala	Gly	Gly	Lys	Val	Ser	Leu	Arg	Asp	Cys	Phe	Asn	Leu
305					310					315					320
Phe	Thr	Lys	Glu	Glu	Glu	Leu	Glu	Ser	Glu	Asn	Ala	Pro	Val	Cys	Asp
				325					330					335	
Arg	Cys	Arg	Gln	Lys	Thr	Arg	Ser	Thr	Lys	Lys	Leu	Thr	Val	Gln	Arg
			340					345					350		
Phe	Pro	Arg	Ile	Leu	Val	Leu	His	Leu	Asn	Arg	Phe	Ser	Ala	Ser	Arg
		355					360					365			
Gly	Ser	Ile	Lys	Lys	Ser	Ser	Val	Gly	Val	Asp	Phe	Pro	Leu	Gln	Arg
		370				375					380				
Leu	Ser	Leu	Gly	Asp	Phe	Ala	Ser	Asp	Lys	Ala	Gly	Ser	Pro	Val	Tyr
385					390					395					400

Gln Leu Tyr Ala Leu Cys Asn His Ser Gly Ser Val His Tyr Gly His  
                                   405                                  410                                  415

Tyr Thr Ala Leu Cys Arg Cys Gln Thr Gly Trp His Val Tyr Asn Asp  
                                   420                                  425                                  430

Ser Arg Val Ser Pro Val Ser Glu Asn Gln Val Ala Ser Ser Glu Gly  
                                   435                                  440                                  445

Tyr Val Leu Phe Tyr Gln Leu Met Gln Glu Pro Pro Arg Cys Leu  
                                   450                                  455                                  460

<210> 213

<211> 53

<212> PRT

<213> Homo sapiens

<400> 213

Lys Ile Glu Leu Met Val Cys Thr Lys Ser Leu Val Tyr Val Leu Val  
       1                                  5                                  10                                  15

Phe Gln Asn Asn Phe Tyr Ile Asn Ile Tyr Ile Val Lys Lys Phe Phe  
                                   20                                  25                                  30

Leu Ile Phe Gly Trp Asp Ile Arg Lys Tyr Leu Tyr Tyr Thr Leu Ser  
                                   35                                  40                                  45

Tyr Tyr Asn Gly Thr  
                                   50

<210> 214

<211> 9

<212> PRT

<213> Homo sapiens

<400> 214

Leu Leu Ser Cys Phe Tyr Phe Phe Leu  
       1                                  5

<210> 215

<211> 66

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (8)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (11)

<223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (18)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (61)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 215

Met	Leu	Leu	Leu	Cys	Tyr	His	Xaa	Phe	Leu	Xaa	Phe	Val	Leu	Gly	Thr
1				5					10					15	

Gly	Xaa	Val	Asn	Ile	Glu	Glu	Ala	Glu	Lys	Leu	Leu	Lys	Pro	Tyr	Leu
			20					25					30		

Asn	Arg	Tyr	Pro	Lys	Gly	Ala	Ile	Phe	Leu	Phe	Phe	Ala	Gly	Arg	Ile
		35					40					45			

Glu	Val	Ile	Lys	Gly	Asn	Ile	Asp	Ala	Ala	Ile	Arg	Xaa	Phe	Glu	Glu
	50					55					60				

Cys	Cys
65	

&lt;210&gt; 216

&lt;211&gt; 66

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (8)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (11)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (18)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (61)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 216

Met	Leu	Leu	Leu	Cys	Tyr	His	Xaa	Phe	Leu	Xaa	Phe	Val	Leu	Gly	Thr
1				5					10					15	

Gly	Xaa	Val	Asn	Ile	Glu	Glu	Ala	Glu	Lys	Leu	Leu	Lys	Pro	Tyr	Leu
			20					25					30		

Asn Arg Tyr Pro Lys Gly Ala Ile Phe Leu Phe Phe Ala Gly Arg Ile  
                   35                                  40                                  45

Glu Val Ile Lys Gly Asn Ile Asp Ala Ala Ile Arg Xaa Phe Glu Glu  
           50                                  55                                  60

Cys Cys  
       65

<210> 217

<211> 43

<212> PRT

<213> Homo sapiens

<400> 217

Met Tyr Lys Ile Thr Tyr Arg Val Cys Phe Leu Cys Gln Pro Leu Met  
       1                                  5                                  10                                  15

Val Gly Leu Gly Cys Ile Gly Ser Ile Ala Ile Val Leu Leu Leu Leu  
                   20                                  25                                  30

Leu Leu Val Pro His Val Cys Pro Lys Ile Leu  
           35                                  40

<210> 218

<211> 43

<212> PRT

<213> Homo sapiens

<400> 218

Met Tyr Lys Ile Thr Tyr Arg Val Cys Phe Leu Cys Gln Pro Leu Met  
       1                                  5                                  10                                  15

Val Gly Leu Gly Cys Ile Gly Ser Ile Ala Ile Val Leu Leu Leu Leu  
                   20                                  25                                  30

Leu Leu Val Pro His Val Cys Pro Lys Ile Leu  
           35                                  40

<210> 219

<211> 79

<212> PRT

<213> Homo sapiens

<400> 219

Ala Pro Leu Ala Ala Ser Thr Ile Leu Ala Val Ala Ser Ala Arg Ile  
       1                                  5                                  10                                  15

Leu Ala Ala Leu Lys Ser Leu Arg Glu Phe Ser Arg Ser Leu Ser Pro  
           20                                  25                                  30

Ser Ala Ser Ala Leu Met Ala Leu Thr Arg Ser Asp Val Ala Trp Ala  
           35                                  40                                  45



Arg Met Arg Ala Cys Arg Thr Ile Ser Pro Ala Ser Pro Met Glu Leu  
 50 55 60

Lys Met Phe Ser Val Thr Val Arg Met Val Ser Val Ala Trp Ser  
 65 70 75

<210> 220

<211> 72

<212> PRT

<213> Homo sapiens

<400> 220

Met Gly Thr Leu Met Val Leu Thr Arg Leu Ala Val Leu Leu Ala Thr  
 1 5 10 15

Ser Leu Ala Asp Cys Thr Asn Trp Arg Leu Ala Val Gly Leu Val Val  
 20 25 30

Arg Ala Glu Ala Arg Arg Gln Leu Leu His Ser Ala Glu Val Cys Leu  
 35 40 45

Ala Thr Met Val Ala Ala Glu Ser Thr Trp Ala Trp Val Gln Pro Gly  
 50 55 60

Ser Pro Lys Leu Trp Gln Ala Ile  
 65 70

<210> 221

<211> 72

<212> PRT

<213> Homo sapiens

<400> 221

Met Gly Thr Leu Met Val Leu Thr Arg Leu Ala Val Leu Leu Ala Thr  
 1 5 10 15

Ser Leu Ala Asp Cys Thr Asn Trp Arg Leu Ala Val Gly Leu Val Val  
 20 25 30

Arg Ala Glu Ala Arg Arg Gln Leu Leu His Ser Ala Glu Val Cys Leu  
 35 40 45

Ala Thr Met Val Ala Ala Glu Ser Thr Trp Ala Trp Val Gln Pro Gly  
 50 55 60

Ser Pro Lys Leu Trp Gln Ala Ile  
 65 70

<210> 222

<211> 43

<212> PRT

<213> Homo sapiens

&lt;400&gt; 222

Met Cys Arg Thr Gln Phe His Leu Phe Trp Phe Ile Val Thr Glu Leu  
 1 5 10 15

Ser Pro Val Ile Trp Ala Lys Ala Asn Gln Lys Leu Ser Cys Leu Ser  
 20 25 30

Gln Gln Thr Leu Val Leu Val Tyr Phe Cys Arg  
 35 40

&lt;210&gt; 223

&lt;211&gt; 84

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (36)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (37)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 223

Phe Ser Ile Phe Lys Asn His Ile Ser Leu Cys Trp Leu Ile Ile Ile  
 1 5 10 15

Asn Phe Lys His Ser Phe Leu Gln Ser Gly Phe Ser Glu Phe Phe Phe  
 20 25 30

Phe Lys Gln Xaa Xaa His Ser Phe Phe Leu Val Thr Ser Lys Gly Gly  
 35 40 45

Thr Gly Val Gly Gly Lys Glu Cys Leu Lys Met Lys Ser Leu Asp Ile  
 50 55 60

Glu Gly Pro Arg Arg Thr Gly Tyr Ala Lys Ile Ile Ser Asn Ser Ser  
 65 70 75 80

Thr Ile Leu Glu

&lt;210&gt; 224

&lt;211&gt; 43

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 224

Met Cys Arg Thr Gln Phe His Leu Phe Trp Phe Ile Val Thr Glu Leu  
 1 5 10 15

Ser Pro Val Ile Trp Ala Lys Ala Asn Gln Lys Leu Ser Cys Leu Ser  
 20 25 30

Gln Gln Thr Leu Val Leu Val Tyr Phe Cys Arg  
35 40

<210> 225  
<211> 27  
<212> PRT  
<213> Homo sapiens

<400> 225  
Pro His Cys Arg Trp Pro Gly Leu Tyr Arg Gln Leu Gly Arg Arg Arg  
1 5 10 15

Arg Ser Thr Ala Leu Leu Arg Cys His Asn Val  
20 25

<210> 226  
<211> 37  
<212> PRT  
<213> Homo sapiens

<400> 226  
Met Arg Lys Arg Arg Pro Tyr Asn Arg Trp Thr Gly Cys Trp Leu Arg  
1 5 10 15

Leu Ala Val Ser Cys Arg Trp Ala Val Ala Ile Ser Ala Ser Pro Trp  
20 25 30

Leu Arg Leu Thr Ser  
35

<210> 227  
<211> 37  
<212> PRT  
<213> Homo sapiens

<400> 227  
Met Arg Lys Arg Arg Pro Tyr Asn Arg Trp Thr Gly Cys Trp Leu Arg  
1 5 10 15

Leu Ala Val Ser Cys Arg Trp Ala Val Ala Ile Ser Ala Ser Pro Trp  
20 25 30

Leu Arg Leu Thr Ser  
35

<210> 228  
<211> 153  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE

&lt;222&gt; (98)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 228

Met Ala Ala Thr Gln Thr Gly Thr Cys Leu Met Val Ala Ala Leu Cys  
 1 5 10 15

Phe Val Leu Val Leu Gly Ser Leu Val Pro Cys Leu Pro Glu Phe Ser  
 20 25 30

Ser Gly Ser Gln Thr Val Lys Glu Asp Pro Leu Ala Ala Asp Gly Val  
 35 40 45

Tyr Thr Ala Ser Gln Met Pro Ser Arg Ser Leu Leu Phe Tyr Asp Asp  
 50 55 60

Gly Ala Gly Leu Trp Glu Asp Gly Arg Ser Thr Leu Leu Pro Met Glu  
 65 70 75 80

Pro Pro Asp Gly Trp Glu Ile Asn Pro Gly Gly Pro Ala Glu Gln Arg  
 85 90 95

Pro Xaa Asp His Leu Gln His Asp His Leu Asp Ser Thr His Glu Thr  
 100 105 110

Thr Lys Tyr Leu Ser Glu Ala Trp Pro Lys Asp Gly Gly Asn Gly Thr  
 115 120 125

Ser Pro Asp Phe Ser His Ser Lys Glu Trp Phe His Asp Arg Asp Leu  
 130 135 140

Gly Pro Asn Thr Thr Ile Lys Leu Ser  
 145 150

&lt;210&gt; 229

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 229

Met Ala Ala Thr Gln Thr Gly Thr Cys Leu Met Val Ala Ala Leu Cys  
 1 5 10 15

Phe Val Leu Val Leu Gly Ser Leu Val Pro Cys Leu Pro Glu Phe Ser  
 20 25 30

Ser Gly Ser Gln Thr Val Lys Glu Asp Pro Leu Ala Ala Asp Gly Val  
 35 40 45

Tyr Thr Ala Ser Gln Met Pro Ser Arg Ser Leu Leu Phe Tyr Asp Asp  
 50 55 60

Gly Ala Gly Leu Trp Glu Asp Gly Arg Ser Thr Leu Leu Pro Met Glu  
 65 70 75 80

Pro Pro Asp Gly Trp Glu Ile Asn Pro Gly Gly Pro Ala Glu Gln Arg  
 85 90 95

Pro Arg Asp His Leu Gln His Asp His Leu Asp Ser Thr His Glu Thr  
 100 105 110

Thr Lys Tyr Leu Ser Glu Ala Trp Pro Lys Asp Gly Gly Asn Gly Thr  
 115 120 125

Ser Pro Asp Phe Ser His Ser Lys Glu Trp Phe His Asp Arg Asp Leu  
 130 135 140

Gly Pro Asn Thr Thr Ile Lys Leu Ser  
 145 150

<210> 230  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 230  
 Met Cys Leu Thr Thr Ala Gly Phe Cys Leu Leu Ala Ile His Ser Phe  
 1 5 10 15

Ala Leu Gly Val Gln Ser Arg Gln Gln His Ser Val Pro Ile Val Phe  
 20 25 30

Glu Val Leu Pro Leu Arg Val Pro Glu Pro Ser Arg Val Thr Gly Cys  
 35 40 45

Ser Ser Phe Phe Gln Thr Lys Val Leu Cys Lys Gln His Leu Leu Gly  
 50 55 60

Pro Arg Ala Ser Val Asn Ile Val Leu Ala Cys Leu Ala Cys Cys His  
 65 70 75 80

Arg Lys Gly Leu Cys Val His Ile Pro Ala Asn Leu Met Ser Pro Ser  
 85 90 95

Ser Ala Lys Leu Tyr His Ser Leu His  
 100 105

<210> 231  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<400> 231  
 Phe Cys Leu Ile Trp Ser Ala Tyr Leu Leu Met Cys Leu Phe Leu Phe  
 1 5 10 15

Cys Leu Phe Tyr Phe Tyr Phe Ser Val Asn Ala Arg Thr Asp Leu His  
 20 25 30

Val Lys Ser Gly Leu  
 35

<210> 232  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 232  
 Met Cys Leu Thr Thr Ala Gly Phe Cys Leu Leu Ala Ile His Ser Phe  
     1                    5                    10                    15  
 Ala Leu Gly Val Gln Ser Arg Gln Gln His Ser Val Pro Ile Val Phe  
                     20                    25                    30  
 Glu Val Leu Pro Leu Arg Val Pro Glu Pro Ser Arg Val Thr Gly Cys  
                     35                    40                    45  
 Ser Ser Phe Phe Gln Thr Lys Val Leu Cys Lys Gln His Leu Leu Gly  
     50                    55                    60  
 Pro Arg Ala Ser Val Asn Ile Val Leu Ala Cys Leu Ala Cys Cys His  
     65                    70                    75                    80  
 Arg Lys Gly Leu Cys Val His Ile Pro Ala Asn Leu Met Ser Pro Ser  
                     85                    90                    95  
 Ser Ala Lys Leu Tyr His Ser Leu His  
                     100                    105

<210> 233  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 233  
 Tyr Ser Pro Leu Cys  
     1                    5

<210> 234  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 234  
 Met Ala Tyr Ser Pro Leu Leu Ile Ser Leu Val Leu Ala Phe Xaa Pro  
     1                    5                    10                    15  
 Ala Ser Thr Tyr Gly Arg Ala Ser Ile Asp Phe Thr Cys Phe Pro Asn  
                     20                    25                    30  
 His Tyr Gly Ile Ser Asn Gln Tyr  
                     35                    40

<210> 235  
 <211> 160  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (55)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 235  
 Phe Phe Asp Ser Ile Gly Ala Leu Val Pro Gln Phe Leu Ala Asn Asp  
   1                  5                  10                  15  
 Asp Glu Leu Ser Ser His Thr Tyr Gly Leu Leu Val Asn Lys Asn Asn  
                   20                  25                  30  
 His Leu Gly His Leu Ala Val Cys Ile Ser Gln Cys Ile Trp Gly Leu  
           35                  40                  45  
 Leu Ser Pro Cys Glu Leu Xaa Gly Ile Ser Leu Gly Ser Ile Ile Leu  
   50                  55                  60  
 Phe Cys Pro Thr Pro Cys Ser Met Gln Thr Pro Ser Pro Ala Cys Trp  
   65                  70                  75                  80  
 Ser Pro Ser Gly Asn Pro Gly Leu Ala His Thr Leu Cys Trp Arg Ala  
                   85                  90                  95  
 Cys Thr Leu Met Pro Leu Leu Arg Leu Gly Pro Tyr Leu Val Thr Leu  
           100                  105                  110  
 Phe Ala Leu Pro Ser Glu Thr Glu Gln Leu Ala Pro Ser Ala Leu Val  
           115                  120                  125  
 Val Pro Cys Glu Ala Leu Leu Leu Ser Gly Phe Leu His Arg Asp Pro  
   130                  135                  140  
 Cys Arg Leu Pro Ala Asp Met Gln Asp Ala Leu Leu Ser Val Asp Val  
 145                  150                  155                  160

<210> 236  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 236  
 Met Ala Tyr Ser Pro Leu Leu Ile Ser Leu Val Leu Ala Phe Xaa Pro

1		5		10		15
Ala	Ser	Thr	Tyr	Gly	Arg	Ala
			20			
					25	
						30
His	Tyr	Gly	Ile	Ser	Asn	Gln
		35				40

<210> 237  
 <211> 236  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (29)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (70)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (73)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (80)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (97)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (112)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (117)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (122)  
 <223> Xaa equals any of the naturally occurring L-amino acids



&lt;400&gt; 237

Met Glu Xaa Pro Ala Gln Leu Leu Phe Leu Leu Leu Leu Trp Leu Pro  
 1 5 10 15

Asp Thr Thr Gly Glu Ile Val Leu Thr Gln Ser Pro Xaa Thr Leu Ser  
 20 25 30

Leu Ser Pro Gly Glu Arg Ala Thr Leu Ser Cys Arg Ala Ser Gln Ser  
 35 40 45

Val Ser Ser Tyr Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro  
 50 55 60

Arg Leu Leu Ile Tyr Xaa Ala Ser Xaa Arg Ala Thr Gly Ile Pro Xaa  
 65 70 75 80

Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser  
 85 90 95

Xaa Leu Glu Pro Glu Asp Phe Ala Val Tyr Tyr Cys Gln Gln Arg Xaa  
 100 105 110

Asn Trp Pro Pro Xaa Tyr Thr Phe Gly Xaa Gly Thr Lys Val Glu Ile  
 115 120 125

Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp  
 130 135 140

Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn  
 145 150 155 160

Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu  
 165 170 175

Gln Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp  
 180 185 190

Ser Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr  
 195 200 205

Glu Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser  
 210 215 220

Ser Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys  
 225 230 235

&lt;210&gt; 238

&lt;211&gt; 144

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 238

Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp Leu Ser  
 1 5 10 15

Gly Ala Lys Cys Asp Thr Gln Met Thr Gln Ser Pro Ser Ser Leu Ser  
 20 25 30

Ala	Ser	Val	Gly	Asp	Thr	Val	Thr	Ile	Thr	Cys	Gln	Ala	Ser	Asp	Asp
		35					40					45			
Ile	Ser	Lys	Asp	Leu	Asn	Trp	Phe	Gln	Gln	Lys	Pro	Gly	Thr	Ala	Pro
	50					55					60				
Lys	Leu	Leu	Ile	Phe	Asp	Ala	Ser	Asn	Leu	Glu	Thr	Gly	Val	Pro	Ser
65					70					75					80
Arg	Phe	Ser	Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Phe	Thr	Ile	Ser
				85					90					95	
Ser	Leu	Gln	Pro	Glu	Asp	Phe	Ala	Thr	Tyr	Tyr	Cys	Gln	Gln	Tyr	Asp
			100					105					110		
Asn	Pro	Pro	Ser	Leu	Ser	Ala	Glu	Gly	Pro	Lys	Trp	Arg	Ser	Asn	Glu
		115					120					125			
Leu	Trp	Leu	His	His	Leu	Ser	Ser	Ser	Ser	Arg	His	Leu	Met	Ser	Ser
130						135					140				

<210> 239

<211> 50

<212> PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

<221> SITE

<222> (4)

<223> Xaa equals any of the naturally occurring L-amino acids

$\langle 220 \rangle$

<221> SITE

 $\langle 222 \rangle$  (10)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

<221> SITE

<222> (22)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

<221> SITE

<222> (35)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

<222> (39)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

$\langle 222 \rangle$  (42)

<223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 239

Val His Ala Xaa Thr Pro Phe Ala Gly Xaa Cys Phe Asp Pro Val Ser  
 1 5 10 15

Leu Tyr Trp Cys Tyr Xaa Asn Pro Gly Thr His Cys Tyr Pro Thr Leu  
 20 25 30

Arg Gly Xaa Glu Gln Arg Xaa Pro Ser Xaa Arg Ser His Ile Val Leu  
 35 40 45

Arg Ser  
 50

&lt;210&gt; 240

&lt;211&gt; 64

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 240

Met Val Ser Pro Leu Ile Ser Ala Leu Phe His Val Pro Phe Leu Trp  
 1 5 10 15

Leu Gly Met Phe Phe Pro His Ser Leu Ser Gly Pro Phe Pro Ser His  
 20 25 30

Leu Arg Arg Ala Ser Ser Ser Arg Lys Pro Leu Val Lys Pro Pro Arg  
 35 40 45

Ala Arg Gln Tyr Pro Pro Leu Ala Ser Ser Gly Tyr Arg Gly Arg Ile  
 50 55 60

&lt;210&gt; 241

&lt;211&gt; 26

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 241

Met Ser Phe Pro His Ala Ser Thr Leu Pro Phe His Lys Leu Ser Asp  
 1 5 10 15

Leu Gln His Thr Leu Pro Asn His Gln Gly  
 20 25

&lt;210&gt; 242

&lt;211&gt; 64

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 242

Met Val Ser Pro Leu Ile Ser Ala Leu Phe His Val Pro Phe Leu Trp

1		5		10		15									
Leu	Gly	Met	Phe	Phe	Pro	His	Ser	Leu	Ser	Gly	Pro	Phe	Pro	Ser	His
		20						25					30		
Leu	Arg	Arg	Ala	Ser	Ser	Ser	Arg	Lys	Pro	Leu	Val	Lys	Pro	Pro	Arg
		35					40					45			
Ala	Arg	Gln	Tyr	Pro	Pro	Leu	Ala	Ser	Ser	Gly	Tyr	Arg	Gly	Arg	Ile
	50					55					60				

&lt;210&gt; 243

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (21)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (27)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (31)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 243

Phe	Asn	Phe	Lys	Phe	Ala	His	Arg	Pro	Ser	Asn	Pro	Leu	Val	Asn	Leu
1				5					10					15	

Thr	Val	Ser	Pro	Xaa	Arg	Asn	Ser	Ser	Leu	Xaa	Thr	Arg	Lys	Xaa	Pro
			20						25					30	

Cys	Arg	Glu	Ser	Lys	Lys	Phe	Asn	Thr	His	Ser	Arg	Pro	Lys	Ser	Ser
		35					40					45			

His	Gln	Leu	Arg	Lys	Arg	Ser	Ser	Ser	Thr	Pro	Thr	Thr
	50					55					60	

&lt;210&gt; 244

&lt;211&gt; 56

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 244

Met	Leu	Ile	Phe	Leu	Lys	Cys	Leu	Thr	Val	Ser	Tyr	Ala	Lys	Tyr	Ser
1				5					10					15	

Ser Lys Ile Tyr Thr Ala Val Ser Asn Thr Phe Ser Thr Ala Ser Asp  
                   20                  25                  30

Ser Trp Leu Cys Val Lys Thr Pro Arg Gly Tyr His Trp Phe Met Ser  
           35                  40                  45

Leu Glu Thr Pro Asp Ile Glu Gln  
       50                  55

<210> 245

<211> 10

<212> PRT

<213> Homo sapiens

<400> 245

Val Leu Leu Phe Leu Ser Leu Leu Thr Ser  
       1                  5                  10

<210> 246

<211> 56

<212> PRT

<213> Homo sapiens

<400> 246

Met Leu Ile Phe Leu Lys Cys Leu Thr Val Ser Tyr Ala Lys Tyr Ser  
       1                  5                  10                  15

Ser Lys Ile Tyr Thr Ala Val Ser Asn Thr Phe Ser Thr Ala Ser Asp  
                   20                  25                  30

Ser Trp Leu Cys Val Lys Thr Pro Arg Gly Tyr His Trp Phe Met Ser  
       35                  40                  45

Leu Glu Thr Pro Asp Ile Glu Gln  
       50                  55

<210> 247

<211> 75

<212> PRT

<213> Homo sapiens

<400> 247

Glu Asp Met Pro Arg Arg Lys Glu Glu Leu Thr Asp Tyr Gln Lys Lys  
       1                  5                  10                  15

Lys Val Ile Leu Gln Asn Leu Lys His Ser Leu Phe Leu Ser Leu Leu  
           20                  25                  30

Ser His Tyr Phe Tyr Ser Asn Pro Leu Glu Tyr Leu His Phe Ala Ser  
       35                  40                  45

Glu Gln Arg Asp Lys Phe Phe Ser His His Val Cys Thr Gly Val Val  
       50                  55                  60

Leu Ile Leu Asp Ile Ala Gly Thr Asn Phe Ser  
 65 70 75

<210> 248  
 <211> 55  
 <212> PRT  
 <213> Homo sapiens

<400> 248  
 Met Ile Tyr Phe Ala Leu Leu Leu Ala Ser Leu Phe Phe Leu Leu Lys  
 1 5 10 15  
 Val Lys Ser His Phe Gly Cys Lys Asn Val Thr Thr Thr Ser Ala Arg  
 20 25 30  
 Ile Phe Leu Lys Pro Leu Cys Thr Pro Lys Ser Ile Phe Pro Leu Ser  
 35 40 45  
 Arg Tyr Gly Arg Met Ser Ser  
 50 55

<210> 249  
 <211> 55  
 <212> PRT  
 <213> Homo sapiens

<400> 249  
 Met Ile Tyr Phe Ala Leu Leu Leu Ala Ser Leu Phe Phe Leu Leu Lys  
 1 5 10 15  
 Val Lys Ser His Phe Gly Cys Lys Asn Val Thr Thr Thr Ser Ala Arg  
 20 25 30  
 Ile Phe Leu Lys Pro Leu Cys Thr Pro Lys Ser Ile Phe Pro Leu Ser  
 35 40 45  
 Arg Tyr Gly Arg Met Ser Ser  
 50 55

<210> 250  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 250  
 Met Leu His Asn Ala Phe Leu Phe Val Leu Phe Ala Leu Val Ser Gly  
 1 5 10 15  
 Tyr Gly Asn Tyr Ala Ala Thr Ala His Asp Trp Leu Tyr Glu Asn Gly  
 20 25 30  
 Gln Leu Ser Arg Lys Glu Ala Asp Ala Val Leu Tyr Arg Ala Leu Arg  
 35 40 45

Ala Glu Gly Val Ala Arg Trp Arg Ala Trp Leu Met Tyr Ala Gly Val  
 50 55 60

Arg Leu Gly Gly Ala Lys Gln Tyr Lys Thr Pro Thr Ser Ser Gly Phe  
 65 70 75 80

Ser Ser Ser Gly Asp  
 85

<210> 251  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 251  
 Met Leu His Asn Ala Phe Leu Phe Val Leu Phe Ala Leu Val Ser Gly  
 1 5 10 15

Tyr Gly Asn Tyr Ala Ala Thr Ala His Asp Trp Leu Tyr Glu Asn Gly  
 20 25 30

Gln Leu Ser Arg Lys Glu Ala Asp Ala Val Leu Tyr Arg Ala Leu Arg  
 35 40 45

Ala Glu Gly Val Ala Arg Trp Arg Ala Trp Leu Met Tyr Ala Gly Val  
 50 55 60

Arg Leu Gly Gly Ala Lys Gln Tyr Lys Thr Pro Thr Ser Ser Gly Phe  
 65 70 75 80

Ser Ser Ser Gly Asp  
 85

<210> 252  
 <211> 59  
 <212> PRT  
 <213> Homo sapiens

<400> 252  
 Met Ile Ile Ala Asn Ile Phe Met Asn Pro Leu Leu Cys Ala Gly Tyr  
 1 5 10 15

Leu Phe Cys Phe Ala Tyr Thr Leu Ile His Leu Ile Leu Leu Thr Thr  
 20 25 30

Ser Glu Val Cys Ser Ile Thr Ala Pro Phe Phe Thr Ala Val Leu Gln  
 35 40 45

Ser Ser Ala Cys Pro Ser Thr His Trp Pro Glu  
 50 55

<210> 253  
 <211> 59  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 253

Met Ile Ile Ala Asn Ile Phe Met Asn Pro Leu Leu Cys Ala Gly Tyr  
 1 5 10 15  
 Leu Phe Cys Phe Ala Tyr Thr Leu Ile His Leu Ile Leu Leu Thr Thr  
 20 25 30  
 Ser Glu Val Cys Ser Ile Thr Ala Pro Phe Phe Thr Ala Val Leu Gln  
 35 40 45  
 Ser Ser Ala Cys Pro Ser Thr His Trp Pro Glu  
 50 55

&lt;210&gt; 254

&lt;211&gt; 67

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 254

Met Leu Phe Leu Ile Tyr Val Ser Leu Leu Met Leu Leu Phe Ser Leu  
 1 5 10 15  
 Cys Leu Ser Leu Pro His Leu Gln Pro Pro Ser Leu Arg Glu Ile Leu  
 20 25 30  
 Ile Pro Val His Ser Leu Arg Phe Ser Leu Val Ser Pro Leu His Gly  
 35 40 45  
 Ser Leu Ala Ser Ser Leu Leu Leu Gln His Cys Gly Thr Leu Arg Gln  
 50 55 60  
 Val Phe Phe  
 65

&lt;210&gt; 255

&lt;211&gt; 67

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 255

Met Leu Phe Leu Ile Tyr Val Ser Leu Leu Met Leu Leu Phe Ser Leu  
 1 5 10 15  
 Cys Leu Ser Leu Pro His Leu Gln Pro Pro Ser Leu Arg Glu Ile Leu  
 20 25 30  
 Ile Pro Val His Ser Leu Arg Phe Ser Leu Val Ser Pro Leu His Gly  
 35 40 45  
 Ser Leu Ala Ser Ser Leu Leu Leu Gln His Cys Gly Thr Leu Arg Gln  
 50 55 60  
 Val Phe Phe  
 65



<210> 256  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<400> 256  
 Ser Leu Lys His Phe Trp Ser Gln Gly Phe Trp Ile Lys Asp Thr Gln  
     1                    5                    10                    15  
 Cys Ala Thr Cys Arg Met Val Val Ala Arg Trp Glu Glu Arg Met Glu  
                     20                    25                    30  
 Ser Tyr Cys Leu Met Ile Gln Cys Phe Arg Leu Gly Arg Trp Lys Val  
                     35                    40                    45  
 Leu Glu Met Cys Asp Gly Tyr Gly Cys Ala Thr Met Gly Arg Tyr Leu  
                     50                    55                    60  
 Val Leu Leu Asn Cys Ala His Leu Lys Met Val Lys Met Ile Asn Phe  
     65                    70                    75                    80  
 Val Tyr Val Leu Lys Gln  
                     85

<210> 257  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (36)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (37)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 257  
 Met Gln Arg Leu Gly Lys Ala Pro Gly Thr Trp Gln Ala Ile Ser Lys  
     1                    5                    10                    15  
 Cys Trp Leu Leu Leu Leu Ser Leu Pro Phe Ser Gln Ser Ile Ile  
                     20                    25                    30  
 Ile Ser Leu Xaa Xaa Gly Thr Met Ser Tyr Leu Pro Leu Tyr Phe Pro  
                     35                    40                    45  
 Gln Tyr Phe Pro  
     50

<210> 258

<211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 258  
 Met Gln Arg Leu Gly Lys Ala Pro Gly Thr Trp Gln Ala Ile Ser Lys  
           1                  5                  10                  15  
 Cys Trp Leu Leu Leu Leu Ser Leu Pro Phe Ser Gln Ser Ile Ile  
                   20                  25                  30  
 Ile Ser Leu Arg Ala Gly Thr Met Ser Tyr Leu Pro Leu Tyr Phe Pro  
           35                  40                  45  
 Gln Tyr Phe Pro  
           50

<210> 259  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 259  
 Met Leu Cys Val Leu Leu Ala Val Ala Phe Gln Ser Ser Pro Ile Pro  
           1                  5                  10                  15  
 Gly Ala Ala Ala  
                   20

<210> 260  
 <211> 69  
 <212> PRT  
 <213> Homo sapiens

<400> 260  
 Met Ala Leu Phe Arg Pro Ile Leu Leu Pro Ala Pro Gly Ala Trp Trp  
           1                  5                  10                  15  
 Trp Pro Cys His His Ala Leu Cys Pro Ser Gly Cys Gly Phe Pro Glu  
                   20                  25                  30  
 Gln Pro His Ser Arg Cys Ser Ser Leu Glu Leu Gln Ser Ala Ser Arg  
           35                  40                  45  
 Gln Cys Trp Leu Gln Trp Leu Gly Asp Ile Arg Pro Leu Leu Leu Gln  
           50                  55                  60  
 Gly Arg Glu Val Thr  
           65

<210> 261  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (34)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 261

Met Gly Leu Ile Ala Ala Asp Val Asn Leu Asp Leu Leu Val Gln Val  
 1 5 10 15

Val Pro Ala Ser Cys Leu His Cys Gly Val Thr Ile Phe Pro Phe Pro  
 20 25 30

His Xaa Ile His Gln Lys Pro Val Thr Lys Arg Gly Gln Thr Pro Gly  
 35 40 45

Gln Gly Asn  
 50

&lt;210&gt; 262

&lt;211&gt; 51

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 262

Met Gly Leu Ile Ala Ala Asp Val Asn Leu Asp Leu Leu Val Gln Val  
 1 5 10 15

Val Pro Ala Ser Cys Leu His Cys Gly Val Thr Ile Phe Pro Phe Pro  
 20 25 30

His Phe Ile His Gln Lys Pro Val Thr Lys Arg Gly Gln Thr Pro Gly  
 35 40 45

Gln Gly Asn  
 50

&lt;210&gt; 263

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 263

Ser Cys Ile Ser Trp Val Phe Val Met Ile Asn Gly Leu  
 1 5 10

&lt;210&gt; 264

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 264

Met Asn Ala Ser Leu Ile Ser Trp Val Leu Val Leu His Arg Ile Cys  
 1 5 10 15

Leu Gly Leu Ser Asp Ile Pro Lys Glu Asn Cys Ile Ile Thr Ile Ser  
                   20                  25                  30

Gly Met Gln Leu Ser His His Gly Gln Ser Leu Gly Lys Trp Ala Glu  
           35                  40                  45

Lys Leu His Val Phe Tyr Ser Leu Phe Ser Phe Leu Leu  
       50                  55                  60

<210> 265

<211> 322

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (28)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 265

Arg Ala Pro Arg Arg Thr Gly Pro Ala Ser Phe Ser Ser Arg Pro Ala  
   1                  5                  10                  15

Gly Thr Cys Ser Asp Asn Arg Val Thr Ser Phe Xaa Asp Leu Ile His  
           20                  25                  30

Asp Gln Asp Glu Asp Glu Glu Glu Glu Gly Gln Arg Phe Tyr Ala  
       35                  40                  45

Gly Gly Ser Glu Arg Ser Gly Gln Gln Ile Val Gly Pro Pro Arg Lys  
       50                  55                  60

Lys Ser Pro Asn Glu Leu Val Asp Asp Leu Phe Lys Gly Ala Lys Glu  
   65                  70                  75                  80

His Gly Ala Val Ala Val Glu Arg Val Thr Lys Ser Pro Gly Glu Thr  
           85                  90                  95

Ser Lys Pro Arg Pro Phe Ala Gly Gly Gly Tyr Arg Leu Gly Ala Ala  
          100                 105                 110

Pro Glu Glu Glu Ser Ala Tyr Val Ala Gly Glu Lys Arg Gln His Ser  
      115                 120                 125

Ser Gln Asp Val His Val Val Leu Lys Leu Trp Lys Ser Gly Phe Ser  
   130                 135                 140

Leu Asp Asn Gly Glu Leu Arg Ser Tyr Gln Asp Pro Ser Asn Ala Gln  
  145                 150                 155                 160

Phe Leu Glu Ser Ile Arg Arg Gly Glu Val Pro Ala Glu Leu Arg Arg  
          165                 170                 175

Leu Ala His Gly Gly Gln Val Asn Leu Asp Met Glu Asp His Arg Asp  
      180                 185                 190

Glu Asp Phe Val Lys Pro Lys Gly Ala Phe Lys Ala Phe Thr Gly Glu

195	200	205
Gly Gln Lys Leu Gly Ser Thr Ala Pro Gln Val Leu Ser Thr Ser Ser		
210	215	220
Pro Ala Gln Gln Ala Glu Asn Glu Ala Lys Ala Ser Ser Ser Ile Leu		
225	230	235 240
Ile Asp Glu Ser Glu Pro Thr Thr Asn Ile Gln Ile Arg Leu Ala Asp		
245	250	255
Gly Gly Arg Leu Val Gln Lys Phe Asn His Ser His Arg Ile Ser Asp		
260	265	270
Ile Arg Leu Phe Ile Val Asp Ala Arg Pro Ala Met Ala Ala Thr Ser		
275	280	285
Phe Ile Leu Met Thr Thr Phe Pro Asn Lys Glu Leu Ala Asp Glu Ser		
290	295	300
Gln Thr Leu Lys Glu Ala Asn Leu Leu Asn Ala Val Ile Val Gln Arg		
305	310	315 320
Leu Thr		

<210> 266  
 <211> 61  
 <212> PRT  
 <213> Homo sapiens

<400> 266  
 Met Asn Ala Ser Leu Ile Ser Trp Val Leu Val Leu His Arg Ile Cys  
 1 5 10 15  
 Leu Gly Leu Ser Asp Ile Pro Lys Glu Asn Cys Ile Ile Thr Ile Ser  
 20 25 30  
 Gly Met Gln Leu Ser His His Gly Gln Ser Leu Gly Lys Trp Ala Glu  
 35 40 45  
 Lys Leu His Val Phe Tyr Ser Leu Phe Ser Phe Leu Leu  
 50 55 60

<210> 267  
 <211> 4  
 <212> PRT  
 <213> Homo sapiens

<400> 267  
 Pro Asn Ser Pro  
 1

<210> 268

<211> 64  
 <212> PRT  
 <213> Homo sapiens

<400> 268

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Met Asp Pro Lys Leu Pro Val Ile Thr Ile Ile Ile Ile Ile Ala
 1              5              10              15

Tyr Ala Phe Val Glu Pro Leu Leu Cys Thr Trp Pro Val Thr Gly Thr
              20              25              30

Leu Ser Val Thr Gln Met Gln Val Ser His Leu Thr Leu Ala Ser Thr
              35              40              45

Leu Arg Asp Gly Phe Tyr Gln His Pro His Phe Thr Asp Glu Glu Asn
 50              55              60
  
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<210> 269  
 <211> 64  
 <212> PRT  
 <213> Homo sapiens

<400> 269

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Met Asp Pro Lys Leu Pro Val Ile Thr Ile Ile Ile Ile Ile Ala
 1              5              10              15

Tyr Ala Phe Val Glu Pro Leu Leu Cys Thr Trp Pro Val Thr Gly Thr
              20              25              30

Leu Ser Val Thr Gln Met Gln Val Ser His Leu Thr Leu Ala Ser Thr
              35              40              45

Leu Arg Asp Gly Phe Tyr Gln His Pro His Phe Thr Asp Glu Glu Asn
 50              55              60
  
```

<210> 270  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 270

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Met Val Ser Leu Cys Ser Gly Leu Pro Ser Ser Cys Leu Leu Leu Gly
 1              5              10              15

Ser Thr Ala Ala Ile Ile Gln Arg Gln Val Cys Leu Phe Gln Gly Ala
              20              25              30

Arg Gln Trp Asn Pro Val Ser Glu Phe Leu Arg Ala His His His Cys
 35              40              45
  
```

Gly Asn Arg Ala Gly Leu Pro Ala Val Leu  
 50 55

<210> 271  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 271  
 Met Val Ser Leu Cys Ser Gly Leu Pro Ser Ser Cys Leu Leu Leu Gly  
 1 5 10 15

Ser Thr Ala Ala Ile Ile Gln Arg Gln Val Cys Leu Phe Gln Gly Ala  
 20 25 30

Arg Gln Trp Asn Pro Val Ser Glu Phe Leu Arg Ala His His His Cys  
 35 40 45

Gly Asn Arg Ala Gly Leu Pro Ala Val Leu  
 50 55

<210> 272  
 <211> 122  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (19)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (73)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 272  
 Lys Ala Pro Ser Ser His Pro Gly Leu Thr Cys Val Ser Leu Ser Arg  
 1 5 10 15

Leu Gln Xaa Ser Leu Ser Leu Cys Phe Pro Ser Gly Pro Cys Trp Ala  
 20 25 30

Gly Leu Leu Ser Ser Leu Ala Leu Ala Gly Gly Ala Pro Gly Ala Leu  
 35 40 45

Pro Pro Trp Gln Pro Gly Gln Asp Ser Lys Met Arg Thr Ala Glu Leu  
 50 55 60

Val Gly Gly Ser His Gly Pro Ala Xaa Gly Pro Gly Glu Ala Glu Pro  
 65 70 75 80

Glu Pro Thr Ala Val Val Leu Trp Thr Val Asp Pro Glu Gly Gly Leu  
 85 90 95

Gly Gln Val Pro Ala Glu Gly Pro Gly Gly Leu Cys Val Pro Leu Gly

100

105

110

Pro Gly Ala Leu Val Thr Trp Thr Pro Gly  
 115 120

&lt;210&gt; 273

&lt;211&gt; 130

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 273

Ser Thr Cys Cys Gly Trp Gly Pro Leu Gly His Ser Arg Val Arg Gly  
 1 5 10 15

Cys His Cys His Leu Gly His Val Gly Arg His Gln His Phe Val Val  
 20 25 30

Thr Asn Ser Thr Val Thr Asn Ile Phe Gly Gln Ile Pro Phe Tyr Thr  
 35 40 45

Ser Arg Gln Leu Leu Val Cys Asn Pro Thr Gly Gln Arg Glu Gly Pro  
 50 55 60

Val Thr Trp Leu Ser His Cys Pro Ala Pro Gln Met Val Leu Gly Leu  
 65 70 75 80

Leu Phe Ser Leu Gly Pro Ala Asn Thr Thr Val Phe Thr Ser Ala His  
 85 90 95

Trp Leu Ser Ala Val Val Pro Gly Ser Gln Trp His Val Ser Pro Arg  
 100 105 110

Ser Ser Leu Ile Pro Gln His Thr Pro Lys Gly Ser Val Ala Asn Thr  
 115 120 125

Leu Asn  
 130

&lt;210&gt; 274

&lt;211&gt; 44

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 274

Met Arg Leu Arg Asn Gly Thr Val Ala Thr Ala Leu Ala Phe Ile Thr  
 1 5 10 15

Ser Phe Leu Thr Leu Ser Trp Tyr Thr Thr Trp Gln Asn Gly Lys Gly  
 20 25 30

Lys Glu Asn Asp Ser Glu Asn Val His Glu Met Tyr  
 35 40

&lt;210&gt; 275



<211> 216  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (6)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (18)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 275

Cys	Phe	Pro	Trp	Gly	Xaa	Ala	Leu	Arg	Gln	Lys	Leu	Phe	Pro	Ser	Ala	1	5	10	15
Leu	Xaa	Ala	Leu	Val	Pro	Ser	Gly	Ala	Gln	Pro	Leu	Pro	Ala	Thr	Lys	20	25	30	
Asp	Thr	Val	Leu	Ala	Pro	Leu	Arg	Met	Ser	Gln	Val	Arg	Ser	Leu	Val	35	40	45	
Ile	Gly	Leu	Gln	Asn	Leu	Leu	Val	Gln	Lys	Asp	Pro	Leu	Leu	Ser	Gln	50	55	60	
Ala	Cys	Val	Gly	Cys	Leu	Glu	Ala	Leu	Leu	Asp	Tyr	Leu	Asp	Ala	Arg	65	70	75	80
Ser	Pro	Asp	Ile	Ala	Leu	His	Val	Ala	Ser	Gln	Pro	Trp	Asn	Arg	Phe	85	90	95	
Leu	Leu	Phe	Thr	Leu	Leu	Asp	Ala	Gly	Glu	Asn	Ser	Phe	Leu	Arg	Pro	100	105	110	
Glu	Ile	Leu	Arg	Leu	Met	Thr	Leu	Phe	Met	Arg	Tyr	Arg	Ser	Ser	Ser	115	120	125	
Val	Leu	Ser	His	Glu	Glu	Val	Gly	Asp	Val	Leu	Gln	Gly	Val	Ala	Leu	130	135	140	
Ala	Asp	Leu	Ser	Thr	Leu	Ser	Asn	Thr	Thr	Leu	Gln	Ala	Leu	His	Gly	145	150	155	160
Phe	Phe	Gln	Gln	Leu	Gln	Ser	Met	Gly	His	Leu	Ala	Asp	His	Ser	Met	165	170	175	
Ala	Gln	Thr	Leu	Gln	Ala	Ser	Leu	Glu	Gly	Leu	Pro	Pro	Ser	Thr	Ser	180	185	190	
Ser	Gly	Gln	Pro	Pro	Leu	Gln	Asp	Met	Leu	Cys	Leu	Gly	Gly	Val	Ala	195	200	205	
Val	Ser	Leu	Ser	His	Ile	Arg	Asn	210	215										

<210> 276

<211> 122  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (92)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (100)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (109)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (116)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 276

Met	Leu	Ala	Leu	Thr	Leu	Ala	Lys	Ala	Asp	Ser	Pro	Arg	Thr	Ala	Leu
1				5					10					15	
Leu	Cys	Ser	Ala	Trp	Leu	Leu	Thr	Ala	Ser	Phe	Ser	Ala	Gln	Gln	His
			20				25						30		
Lys	Gly	Ser	Leu	Gln	Val	His	Gln	Thr	Leu	Ser	Val	Glu	Met	Asp	Gln
		35					40					45			
Val	Leu	Lys	Ala	Leu	Ser	Phe	Pro	Lys	Lys	Lys	Ala	Ala	Leu	Leu	Ser
	50					55					60				
Thr	Ala	Ile	Leu	Cys	Phe	Leu	Arg	Thr	Ala	Leu	Arg	Gln	Ser	Phe	Ser
	65				70					75				80	
Ser	Ala	Trp	Asn	Pro	Gly	Ala	Leu	Lys	Gly	Pro	Xaa	Thr	Ala	Ala	Thr
			85						90					95	
Lys	Asp	Thr	Xaa	Leu	Thr	Ser	Leu	Arg	Met	Ser	Lys	Xaa	Gly	Pro	Gly
			100					105					110		
His	Trp	Ala	Xaa	Lys	Thr	Ser	Trp	Cys	Lys						
		115					120								

<210> 277  
 <211> 282  
 <212> PRT  
 <213> Homo sapiens

<400> 277

Met	Leu	Ala	Leu	Thr	Leu	Ala	Lys	Ala	Asp	Ser	Pro	Arg	Thr	Ala	Leu
1				5					10					15	

Leu Cys Ser Ala Trp Leu Leu Thr Ala Ser Phe Ser Ala Gln Gln His  
 20 25 30  
 Lys Gly Ser Leu Gln Val His Gln Thr Leu Ser Val Glu Met Asp Gln  
 35 40 45  
 Val Leu Lys Ala Leu Ser Phe Pro Lys Lys Lys Ala Ala Leu Leu Ser  
 50 55 60  
 Ala Ala Ile Leu Cys Phe Leu Arg Thr Ala Leu Arg Gln Ser Phe Ser  
 65 70 75 80  
 Ser Ala Leu Val Ala Leu Val Pro Ser Gly Ala Gln Pro Leu Pro Ala  
 85 90 95  
 Thr Lys Asp Thr Val Leu Ala Pro Leu Arg Met Ser Gln Val Arg Ser  
 100 105 110  
 Leu Val Ile Gly Leu Gln Asn Leu Leu Val Gln Lys Asp Pro Leu Leu  
 115 120 125  
 Ser Gln Ala Cys Val Gly Cys Leu Glu Ala Leu Leu Asp Tyr Leu Asp  
 130 135 140  
 Ala Arg Ser Pro Asp Ile Ala Leu His Val Ala Ser Gln Pro Trp Asn  
 145 150 155 160  
 Arg Phe Leu Leu Phe Thr Leu Leu Asp Ala Gly Glu Asn Ser Phe Leu  
 165 170 175  
 Arg Pro Glu Ile Leu Arg Leu Met Thr Leu Phe Met Arg Tyr Arg Ser  
 180 185 190  
 Ser Ser Val Leu Ser His Glu Glu Val Gly Asp Val Leu Gln Gly Val  
 195 200 205  
 Ala Leu Ala Asp Leu Ser Thr Leu Ser Asn Thr Thr Leu Gln Ala Leu  
 210 215 220  
 His Gly Phe Phe Gln Gln Leu Gln Ser Met Gly His Leu Ala Asp His  
 225 230 235 240  
 Ser Met Ala Gln Thr Leu Gln Ala Ser Leu Glu Gly Leu Pro Pro Ser  
 245 250 255  
 Thr Ser Ser Gly Gln Pro Pro Leu Gln Asp Met Leu Cys Leu Gly Gly  
 260 265 270  
 Val Ala Val Ser Leu Ser His Ile Arg Asn  
 275 280

&lt;210&gt; 278

&lt;211&gt; 39

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 278

Met Ala Phe Gly Gln Glu Val Thr His Leu Thr Lys Thr Ser Trp Leu

1 5 10 15  
Ala Pro Leu Arg Phe Ile Lys Gly Leu Leu Gly Pro Trp Gly Trp Ile  
20 25 30  
Leu Leu Ile Leu Asp Leu Glu  
35

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<210> 279
<211> 39
<212> PRT
<213> Homo sapiens
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```
<400> 279
Met Ala Phe Gly Gln Glu Val Thr His Leu Thr Lys Thr Ser Trp Leu
   1                      5              10                  15
Ala Pro Leu Arg Phe Ile Lys Gly Leu Leu Gly Pro Trp Gly Trp Ile
           20                     25                 30
Leu Leu Ile Leu Asp Leu Glu
      35
```

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<210> 280
<211> 107
<212> PRT
<213> Homo sapiens
```

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<400> 280
Gly Leu Asp Val Gln Pro Val Ala Gln Gly Ser Lys Leu Thr Gln Glu
  1                      5                      10                      15
Val Arg Glu Gly Cys Leu Ala Val Ala Gly Ala Asn Gly Phe Arg Gly
          20                      25                      30
Gly Tyr Asp Gly Tyr Arg Pro Ser Phe Ser Asn Thr Pro Asn Ser Gly
          35                      40                      45
Tyr Thr Gln Ser Gln Phe Ser Ala Pro Arg Asp Tyr Ser Gly Tyr Gln
          50                      55                      60
Arg Asp Gly Tyr Gln Gln Asn Phe Lys Arg Gly Ser Gly Gln Ser Gly
          65                      70                      75                      80
Pro Arg Gly Ala Pro Arg Gly Arg Gly Gly Pro Pro Arg Pro Asn Arg
          85                      90                      95
Gly Met Pro Gln Met Asn Thr Gln Gln Val Asn
          100                      105

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<210> 281
<211> 77
<212> PRT
<213> Homo sapiens
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&lt;400&gt; 281

Met Gly Thr His Pro Lys Tyr Leu Glu Met Met Glu Leu Asp Ile Gly  
 1 5 10 15

Asp Ala Thr Gln Val Tyr Val Ala Phe Leu Val Tyr Leu Asp Leu Met  
 20 25 30

Glu Ser Lys Ser Trp His Glu Val Asn Cys Val Gly Leu Pro Glu Leu  
 35 40 45

Gln Leu Ile Cys Leu Val Gly Thr Glu Ile Glu Gly Glu Gly Leu Gln  
 50 55 60

Thr Val Val Pro Asn Pro His His Cys Phe Pro Gln Pro  
 65 70 75

&lt;210&gt; 282

&lt;211&gt; 49

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 282

Met Gly Gly Thr Cys Val Leu Leu Leu Ser Ser His Thr Gln Ser Cys  
 1 5 10 15

Leu Phe Val Ser Cys Cys His Cys Gln Leu Ile Val Glu Thr Ala Ile  
 20 25 30

Ser Phe Ser Tyr Ser Ala Leu Pro Ser Ala Phe Trp Pro Leu Gln Leu  
 35 40 45

Pro

&lt;210&gt; 283

&lt;211&gt; 50

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (43)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (50)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 283

Met Asn Phe Leu Val Phe Leu Ser Leu Ser Ser Ser Leu Val Ser Ala  
 1 5 10 15

Ala Gly Pro Arg Phe Pro Ser Arg Glu Glu Arg Gly Val Gly Gly Val  
 20 25 30

Val Leu Ile Lys Ser Glu Asp Met Thr Leu Xaa Glu Arg Ser Lys Gly  
                   35                                  40                                  45

Ser Xaa  
           50

<210> 284

<211> 240

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (67)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 284

Gly Glu Gly Asp Asp Lys Glu Glu Ser Val Glu Lys Leu Asp Cys His  
   1                                  5                                  10                                  15

Tyr Ser Gly His His Pro Gln Pro Ala Ser Phe Cys Thr Phe Gly Ser  
                   20                                  25                                  30

Arg Gln Ile Gly Arg Gly Tyr Tyr Val Phe Asp Ser Arg Trp Asn Arg  
                   35                                  40                                  45

Leu Arg Cys Ala Leu Asn Leu Met Val Glu Lys His Leu Asn Ala Gln  
   50                                  55                                  60

Leu Trp Xaa Lys Ile Pro Pro Val Pro Ser Thr Thr Ser Pro Ile Ser  
   65                                  70                                  75                                  80

Thr Arg Ile Pro His Arg Thr Asn Ser Val Pro Thr Ser Gln Cys Gly  
                   85                                  90                                  95

Val Ser Tyr Leu Ala Ala Ala Thr Val Ser Thr Ser Pro Val Leu Leu  
                   100                                  105                                  110

Ser Ser Thr Cys Ile Ser Pro Asn Ser Lys Ser Val Pro Ala His Gly  
                   115                                  120                                  125

Thr Thr Leu Asn Ala Gln Pro Ala Ala Ser Gly Ala Met Asp Pro Val  
   130                                  135                                  140

Cys Ser Met Gln Ser Arg Gln Val Ser Ser Ser Ser Ser Ser Pro Ser  
   145                                  150                                  155                                  160

Thr Pro Ser Gly Leu Ser Ser Val Pro Ser Ser Pro Met Ser Arg Lys  
                   165                                  170                                  175

Pro Gln Lys Leu Lys Ser Ser Lys Ser Leu Arg Pro Lys Glu Ser Ser  
                   180                                  185                                  190

Gly Asn Ser Thr Asn Cys Gln Asn Ala Ser Ser Ser Thr Ser Gly Gly  
                   195                                  200                                  205

Ser Gly Lys Lys Arg Lys Asn Ser Ser Pro Leu Leu Val His Ser Ser

210					215					220					
Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	Ser	His	Ser	Met	Gly	Val	Phe
225					230					235					240

```
<210> 285
<211> 43
<212> PRT
<213> Homo sapiens
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```
<220>
<221> SITE
<222> (7)
<223> Xaa equals any of the naturally occurring L-amino acids
```

```

<400> 285
Tyr Ser Met Val Tyr Met Xaa His Ile Phe Leu Ile Gln Ser Ile Ile
  1              5              10              15
Asp Gly His Leu Gly Trp Phe Gln Val Phe Ala Ile Val Asn Ser Ala
      20              25              30
Thr Val Asn Ile Arg Val His Val Ser Leu Trp
    35              40

```

```
<210> 286
<211> 56
<212> PRT
<213> Homo sapiens
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<220>  
<221> SITE  
<222> (3)  
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (4)
<223> xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (14)
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (21)
<223> Xaa equals any of the naturally occurring L-amino acids
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```
<400> 286
Phe Ala Xaa Xaa Asp Gly Phe Gln Leu His Pro Cys Pro Xaa Lys Gly
  1             5             10             15
```

His Glu Leu Ile Xaa Phe Tyr Gly Cys Ile Val Phe His Gly Val Tyr  
                     20                    25                    30

Val Pro His Phe Leu Asn Leu Val Cys His Cys Trp Thr Phe Gly Leu  
                     35                    40                    45

Val Pro Ser Leu Cys Tyr Cys Glu  
                     50                    55

<210> 287

<211> 75

<212> PRT

<213> Homo sapiens

<400> 287

Met Ser Trp Leu Phe Pro Ala Thr Ile Leu Phe Glu Glu Lys Ile Cys  
   1                    5                    10                    15

Phe Ser Leu Phe Pro Arg Lys Leu Val Gly Gln His Gly His Tyr Ser  
                     20                    25                    30

Ser Cys Ala Val Thr Pro Ala Pro Arg Cys Leu Glu Leu Ser Val Leu  
                     35                    40                    45

Thr Phe Met His Asp Cys Lys Ala Ser Trp Ser Ile Phe Tyr Gly Ala  
                     50                    55                    60

Ser Val Cys Phe Arg Pro Met Thr Phe Val Arg  
   65                    70                    75

<210> 288

<211> 75

<212> PRT

<213> Homo sapiens

<400> 288

Met Ser Trp Leu Phe Pro Ala Thr Ile Leu Phe Glu Glu Lys Ile Cys  
   1                    5                    10                    15

Phe Ser Leu Phe Pro Arg Lys Leu Val Gly Gln His Gly His Tyr Ser  
                     20                    25                    30

Ser Cys Ala Val Thr Pro Ala Pro Arg Cys Leu Glu Leu Ser Val Leu  
                     35                    40                    45

Thr Phe Met His Asp Cys Lys Ala Ser Trp Ser Ile Phe Tyr Gly Ala  
                     50                    55                    60

Ser Val Cys Phe Arg Pro Met Thr Phe Val Arg  
   65                    70                    75

<210> 289

<211> 83



&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 289

Ile Val Leu Lys Tyr Ile Met Ala Gly Cys Pro Leu Phe Leu Gly Asn  
 1 5 10 15

Leu Trp Asp Val Thr Asp Arg Asp Ile Asp Arg Tyr Thr Glu Ala Leu  
 20 25 30

Leu Gln Gly Trp Leu Gly Ser Arg Pro Arg Ala Pro Leu Leu Tyr Tyr  
 35 40 45

Val Asn Gln Ala Arg Gln Ala Pro Arg Leu Lys Tyr Leu Ile Gly Ala  
 50 55 60

Ala Pro Ile Pro Met Ala Cys Leu Ser Leu Cys Gly Asn Pro Met Glu  
 65 70 75 80

Leu Ser Tyr

&lt;210&gt; 290

&lt;211&gt; 223

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (132)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 290

Ala Trp Tyr Leu Leu Arg Val Gln Val Leu Gln Leu Val Ala Ala Tyr  
 1 5 10 15

Leu Ser Leu Pro Ser Asn Asn Leu Ser His Ser Leu Trp Glu Gln Leu  
 20 25 30

Cys Ala Gln Gly Trp Gln Thr Pro Glu Ile Ala Leu Ile Asp Ser His  
 35 40 45

Lys Leu Leu Arg Ser Ile Ile Leu Leu Leu Met Gly Ser Asp Ile Leu  
 50 55 60

Ser Thr Gln Lys Ala Ala Val Glu Thr Ser Phe Leu Asp Tyr Gly Glu  
 65 70 75 80

Asn Leu Val Gln Lys Trp Gln Val Leu Ser Glu Val Leu Ser Cys Ser  
 85 90 95

Glu Lys Leu Val Cys His Leu Gly Arg Leu Gly Ser Val Ser Glu Ala  
 100 105 110

Lys Ala Phe Cys Leu Glu Ala Leu Lys Leu Thr Thr Lys Leu Gln Ile  
 115 120 125

Pro Arg Gln Xaa Ala Leu Phe Leu Val Leu Lys Gly Glu Leu Glu Leu

130	135	140
Ala Arg Asn Asp Ile Asp Leu Cys Gln Ser Asp Leu Gln Gln Val Leu		
145	150	155
Phe Leu Leu Glu Ser Cys Thr Glu Phe Gly Gly Val Thr Gln His Leu		
	165	170
Asp Ser Val Lys Lys Val His Leu Gln Lys Gly Lys Gln Gln Ala Gln		
	180	185
Val Pro Cys Pro Pro Gln Leu Pro Glu Glu Glu Leu Phe Leu Arg Gly		
	195	200
Pro Ala Leu Glu Leu Val Pro Leu Trp Pro Arg Ser Leu Ala Pro		
210	215	220

<210> 291  
 <211> 8  
 <212> PRT  
 <213> Homo sapiens

<400> 291  
 Ala Trp Phe Leu Val Lys Pro Glu  
 1 5

<210> 292  
 <211> 223  
 <212> PRT  
 <213> Homo sapiens

<400> 292  
 Ala Trp Tyr Leu Leu Arg Val Gln Val Leu Gln Leu Val Ala Ala Tyr  
 1 5 10 15  
 Leu Ser Leu Pro Ser Asn Asn Leu Ser His Ser Leu Trp Glu Gln Leu  
 20 25 30  
 Cys Ala Gln Gly Trp Gln Thr Pro Glu Ile Ala Leu Ile Asp Ser His  
 35 40 45  
 Lys Leu Leu Arg Ser Ile Ile Leu Leu Leu Met Gly Ser Asp Ile Leu  
 50 55 60  
 Ser Thr Gln Lys Ala Ala Val Glu Thr Ser Phe Leu Asp Tyr Gly Glu  
 65 70 75 80  
 Asn Leu Val Gln Lys Trp Gln Val Leu Ser Glu Val Leu Ser Cys Ser  
 85 90 95  
 Glu Lys Leu Val Cys His Leu Gly Arg Leu Gly Ser Val Ser Glu Ala  
 100 105 110  
 Lys Ala Phe Cys Leu Glu Ala Leu Lys Leu Thr Thr Lys Leu Gln Ile  
 115 120 125

Pro Arg Gln Cys Ala Leu Phe Leu Val Leu Lys Gly Glu Leu Glu Leu  
 130 135 140

Ala Arg Asn Asp Ile Asp Leu Cys Gln Ser Asp Leu Gln Gln Val Leu  
 145 150 155 160

Phe Leu Leu Glu Ser Cys Thr Glu Phe Gly Gly Val Thr Gln His Leu  
 165 170 175

Asp Ser Val Lys Lys Val His Leu Gln Lys Gly Lys Gln Gln Ala Gln  
 180 185 190

Val Pro Cys Pro Pro Gln Leu Pro Glu Glu Glu Leu Phe Leu Arg Gly  
 195 200 205

Pro Ala Leu Glu Leu Val Pro Leu Trp Pro Arg Ser Leu Ala Pro  
 210 215 220

&lt;210&gt; 293

&lt;211&gt; 88

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (7)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (30)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (43)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (46)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 293

Ala Asp Pro Ser Pro Ser Xaa Trp Leu Gln Thr His Arg Gly Pro Arg  
 1 5 10 15

Leu Leu Trp Pro His His Gln Gln Leu Leu Leu Ser Phe Xaa Glu Pro  
 20 25 30

Arg Lys Pro Leu Ile Leu Leu Leu Pro Val Xaa Ala Pro Xaa Ser Leu  
 35 40 45

Lys Pro His Ser Cys Ile Pro Phe Ser Leu Asp Ile Thr Pro Pro Thr  
 50 55 60

Pro Trp Leu Asn Phe Leu Pro Val Val Ala Trp Ser Phe Gly His Cys  
 65 70 75 80

Pro Gly Leu Phe Leu Ser Pro Ser  
85

<210> 294  
<211> 80  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (61)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (69)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (75)  
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 294  
Met His His His Thr Arg Leu Val Phe Val Phe Leu Val Glu Met Gly  
1 5 10 15  
Phe His His Val Gly Gln Ala Gly Leu Glu Leu Leu Thr Ser Ser Asp  
20 25 30  
Leu Pro Ala Leu Ala Ser Gln Ser Ala Gly Ile Thr Gly Val Ser His  
35 40 45  
Cys Ala Gln Leu Pro Phe Leu Pro Leu Lys Ser Lys Xaa Gly Trp Glu  
50 55 60  
Leu Ser Pro Trp Xaa Phe Met Val Ala Lys Xaa Leu Asn Pro Val Ala  
65 70 75 80

<210> 295  
<211> 18  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (4)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (14)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 295

Met Val Ala Xaa Leu Leu Ile Leu Leu Leu Asp Ser Gly Xaa Leu Leu  
1 5 10 15

Ala Gly

<210> 296

<211> 126

<212> PRT

<213> Homo sapiens

<400> 296

Ala Thr Thr Ser Val Pro Lys Tyr Val Phe Asn Leu Asn Phe Ile Leu  
1 5 10 15

Met Cys Leu Arg Asp Glu Ser Lys Tyr Met Leu Val Thr Ser His Ser  
20 25 30

Asn Val Glu Val Gly Arg Trp Leu Pro Gly Leu Pro Ser Pro Gly Arg  
35 40 45

Ile Cys Gly Glu Gln Ser Asp Val His Pro Ser Gly Leu Phe Ser Ile  
50 55 60

Asn Asp Ser Leu Leu Asp Leu Leu Leu Leu Gly Phe Arg Ser Lys Arg  
65 70 75 80

Gly Ile Val Val Glu Asn Ala Leu Leu Gly Glu Gly Glu Pro Glu Ile  
85 90 95

His Lys Arg Arg Leu Pro Cys Ser Phe Ala Tyr Leu Ala Ala Pro Arg  
100 105 110

Leu Gly Val Arg Ile Pro Gly Phe Pro Ser Leu Leu Cys His  
115 120 125

<210> 297

<211> 26

<212> PRT

<213> Homo sapiens

<400> 297

Met Pro Val Val Leu Phe Gln Leu Trp Leu Phe Ile Leu Lys Thr Asp  
1 5 10 15

Asn Ala Phe Ala Trp Leu Lys Ile Arg Arg  
20 25

<210> 298

<211> 136

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (3)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (67)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 298

Pro Ser Xaa Met Leu Leu Leu Trp Ala Ser Ser Leu Pro Thr Arg Cys  
1 5 10 15

Asp Cys Ser Phe Pro Val Thr Pro Leu Val Pro Leu Val His Val Ile  
20 25 30

Cys Val Trp Val Met Phe Pro Ser Ala Ala Thr Ala Ala Cys His Pro  
35 40 45

Gly Ala Gly Ala Phe Phe Ser Gln Gly Pro Ser Pro Phe Ser Arg Thr  
50 55 60

Trp Pro Xaa Leu Gly His Arg Glu Ile Pro Ala Glu Gly Ala Gly Glu  
65 70 75 80

Thr Val Ala Leu Gly Leu Gln Pro Lys Arg His Thr Leu Ala Val Gly  
85 90 95

Val His Gly Met Leu Ala Leu Ser Thr Val Thr Val Gly Gly Phe Gly  
100 105 110

Gly Phe Pro Trp Thr Ser Gly Pro Gly Cys Pro Pro Leu Ser Trp Thr  
115 120 125

Cys Phe Ile Phe Pro Ile Leu Thr  
130 135

<210> 299

<211> 19

<212> PRT

<213> Homo sapiens

<400> 299

Gln Ile Trp Pro Phe Leu Pro Pro Ser Gln Pro Ser Gly Pro Leu Gln  
1 5 10 15

Arg Ala Val

<210> 300

<211> 133

<212> PRT

<213> Homo sapiens

&lt;400&gt; 300

Met Leu Leu Leu Trp Ala Ser Ser Leu Pro Thr Arg Cys Asp Cys Ser  
 1 5 10 15

Phe Pro Val Thr Pro Leu Val Pro Leu Val His Val Ile Cys Val Trp  
 20 25 30

Val Met Phe Pro Ser Ala Ala Thr Ala Ala Cys His Pro Gly Ala Gly  
 35 40 45

Ala Phe Phe Ser Gln Gly Pro Ser Pro Phe Ser Arg Thr Trp Pro Leu  
 50 55 60

Leu Gly His Arg Glu Ile Pro Ala Glu Gly Ala Gly Glu Thr Val Ala  
 65 70 75 80

Leu Gly Leu Gln Pro Lys Arg His Thr Leu Ala Val Gly Val His Gly  
 85 90 95

Met Leu Ala Leu Ser Thr Val Thr Val Gly Gly Phe Gly Gly Phe Pro  
 100 105 110

Trp Thr Ser Gly Pro Gly Cys Pro Pro Leu Ser Trp Thr Cys Phe Ile  
 115 120 125

Phe Pro Ile Leu Thr  
 130

&lt;210&gt; 301

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 301

Ser Ser Leu Lys Asn Gln Val Ser Val Ser Gln  
 1 5 10

&lt;210&gt; 302

&lt;211&gt; 495

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 302

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp  
 1 5 10 15

Val Leu Ser Gln Val Glu Leu Gln Glu Ser Gly Pro Gly Leu Val Lys  
 20 25 30

Pro Ser Gln Thr Leu Ser Leu Thr Cys Ser Val Ser Gly Val Ser Met  
 35 40 45

Ser Arg Gly Asp Trp Ser Trp Ser Trp Val Arg Gln Val Pro Gly Lys  
 50 55 60

Gly Leu Glu Trp Ile Gly His Ile Asp Tyr Thr Gly Lys Thr Asp Tyr  
 65 70 75 80  
 Lys Ser Ser Leu Lys Asn Gln Val Ser Ile Ser Gln Asp Thr Ala Lys  
 85 90 95  
 Asn Gln Phe Phe Leu Arg Val Glu Ser Val Thr Ala Ala Asp Thr Ala  
 100 105 110  
 Val Tyr Phe Cys Ala Arg Leu Phe Glu Ser Ser Gly Tyr Gly Ala Trp  
 115 120 125  
 Leu Asp Pro Trp Gly Pro Gly Ile Leu Val Thr Val Ser Ser Ala Ser  
 130 135 140  
 Pro Thr Ser Pro Lys Val Phe Pro Leu Ser Leu Cys Ser Thr Gln Pro  
 145 150 155 160  
 Asp Gly Asn Val Val Ile Ala Cys Leu Val Gln Gly Phe Phe Pro Gln  
 165 170 175  
 Glu Pro Leu Ser Val Thr Trp Ser Glu Ser Gly Gln Gly Val Thr Ala  
 180 185 190  
 Arg Asn Phe Pro Pro Ser Gln Asp Ala Ser Gly Asp Leu Tyr Thr Thr  
 195 200 205  
 Ser Ser Gln Leu Thr Leu Pro Ala Thr Gln Cys Leu Ala Gly Lys Ser  
 210 215 220  
 Val Thr Cys His Val Lys His Tyr Thr Asn Pro Ser Gln Asp Val Thr  
 225 230 235 240  
 Val Pro Cys Pro Val Pro Ser Thr Pro Pro Thr Pro Ser Pro Ser Thr  
 245 250 255  
 Pro Pro Thr Pro Ser Pro Ser Cys Cys His Pro Arg Leu Ser Leu His  
 260 265 270  
 Arg Pro Ala Leu Glu Asp Leu Leu Leu Gly Ser Glu Ala Asn Leu Thr  
 275 280 285  
 Cys Thr Leu Thr Gly Leu Arg Asp Ala Ser Gly Val Thr Phe Thr Trp  
 290 295 300  
 Thr Pro Ser Ser Gly Lys Ser Ala Val Gln Gly Pro Pro Asp Arg Asp  
 305 310 315 320  
 Leu Cys Gly Cys Tyr Ser Val Ser Ser Val Leu Pro Gly Cys Ala Glu  
 325 330 335  
 Pro Trp Asn His Gly Lys Thr Phe Thr Cys Thr Ala Ala Tyr Pro Glu  
 340 345 350  
 Ser Lys Thr Pro Leu Thr Ala Thr Leu Ser Lys Ser Gly Asn Thr Phe  
 355 360 365  
 Arg Pro Glu Val His Leu Leu Pro Pro Pro Ser Glu Glu Leu Ala Leu  
 370 375 380



Asn Glu Leu Val Thr Leu Thr Cys Leu Ala Arg Gly Phe Ser Pro Lys  
 385 390 395 400  
 Asp Val Leu Val Arg Trp Leu Gln Gly Ser Gln Glu Leu Pro Arg Glu  
 405 410 415  
 Lys Tyr Leu Thr Trp Ala Ser Arg Gln Glu Pro Ser Gln Gly Thr Thr  
 420 425 430  
 Thr Phe Ala Val Thr Ser Ile Leu Arg Val Ala Ala Glu Asp Trp Lys  
 435 440 445  
 Lys Gly Asp Thr Phe Ser Cys Met Val Gly His Glu Ala Leu Pro Leu  
 450 455 460  
 Ala Phe Thr Gln Lys Thr Ile Asp Arg Leu Ala Gly Lys Pro Thr His  
 465 470 475 480  
 Val Asn Val Ser Val Val Met Ala Glu Val Asp Gly Thr Cys Tyr  
 485 490 495

&lt;210&gt; 303

&lt;211&gt; 90

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (8)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 303

Pro Tyr Glu Cys Lys Glu Cys Xaa Lys Ala Phe Arg Val His Val His  
 1 5 10 15

Leu Thr Gln His Arg Lys Ile His Thr Asp Val Lys Pro Tyr Glu Cys  
 20 25 30

Lys Glu Cys Gly Lys Thr Phe Ser Arg Ala Ser Tyr Leu Val Gln His  
 35 40 45

Ser Arg Ile His Thr Gly Lys Lys Pro Tyr Glu Cys Lys Glu Cys Gly  
 50 55 60

Lys Ala Phe Ser Ser Gly Ser Tyr Leu Val Gln His Gln Arg Ile His  
 65 70 75 80

Thr Gly Glu Arg Pro Tyr Trp Leu Thr Tyr  
 85 90

&lt;210&gt; 304

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (5)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 304

Gln	Arg	Ile	His	Xaa	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	Asn	Lys	Cys	Gly
1				5				10					15		

Lys	Ala	Phe	Thr	Val	Tyr	Gly	Gln	Leu	Ile	Gly	His	Gln	Ser	Val	His
			20				25					30			

Thr	Gly	Glu	Lys	Pro	Phe	Glu	Cys	Lys	Glu	Cys	Gly	Lys	Ala	Phe	Arg
		35					40					45			

Leu	Asn	Ser	Phe	Leu	Thr	Glu	His	Gln	Arg	Val	His	Thr	Gly	Glu	Lys
	50					55					60				

Pro	Phe	Lys	Cys	Lys	Lys	Cys	Gly	Lys	Thr	Phe	Arg	Tyr	Ser	Ser	Ala
65					70				75						80

Leu	Lys	Val	His	Leu	Arg	Lys	His	Met	Ser	Val	Ile	Pro
				85					90			

&lt;210&gt; 305

&lt;211&gt; 9

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 305

Met	Trp	Val	Cys	Ser	Ile	Thr	Asp	Gln
1				5				

&lt;210&gt; 306

&lt;211&gt; 264

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (5)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (7)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (13)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (63)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (88)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (170)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (171)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 306

Thr	Trp	Gly	Lys	Xaa	Lys	Xaa	Pro	Phe	Ile	Glu	Ser	Xaa	Pro	Gly	Gly
1				5					10					15	

Lys	Ile	Gly	Trp	Gly	Lys	Lys	Gly	Leu	Phe	Phe	Leu	Lys	Val	Asn	Tyr
	20							25					30		

Trp	Gly	Lys	Lys	Ala	Phe	Asn	Pro	Arg	Gly	His	Ser	Lys	Lys	Val	Thr
	35						40					45			

Phe	His	Gln	Leu	Gly	Leu	Lys	Lys	Asn	Pro	Phe	Trp	Gly	Leu	Xaa	Lys
	50					55					60				

Glu	Val	Leu	Gly	Lys	Ala	Phe	Ser	Thr	Phe	Ser	Tyr	Leu	Val	Gln	His
65					70					75					80

Gln	Arg	Ile	His	Thr	Ser	Glu	Xaa	Pro	Tyr	Glu	Cys	Lys	Glu	Cys	Gly
			85						90					95	

Lys	Ala	Phe	Ser	Thr	Ser	Ser	Pro	Leu	Ala	Lys	His	Gln	Arg	Ile	His
		100						105					110		

Thr	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	Lys	Glu	Cys	Gly	Lys	Ser	Phe	Thr
	115					120						125			

Val	Tyr	Gly	Gln	Leu	Thr	Arg	His	Gln	Ser	Ile	His	Thr	Gly	Glu	Lys
	130					135					140				

Pro	Phe	Glu	Cys	Lys	Glu	Cys	Gly	Lys	Ala	Phe	Arg	Leu	Ser	Ser	Phe
145					150					155					160

Leu	His	Ala	His	Gln	Arg	Ile	His	Ala	Xaa	Xaa	Lys	Pro	Tyr	Gly	Cys
			165						170					175	

Lys	Glu	Cys	Gly	Lys	Thr	Phe	Ser	Arg	Ala	Ser	Tyr	Leu	Val	Gln	His
		180						185					190		

Gly	Arg	Leu	His	Thr	Gly	Glu	Lys	Pro	Cys	Glu	Cys	Lys	Glu	Cys	Gly
		195					200					205			

Lys	Ala	Phe	Ser	Thr	Gly	Ser	Tyr	Leu	Val	Gln	His	Gln	Arg	Ile	His
	210					215					220				

Thr	Gly	Glu	Lys	Pro	Tyr	Glu	Cys	Lys	Glu	Cys	Gly	Lys	Ala	Phe	Ile
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

[illegible]

```
<210> 307
<211> 9
<212> PRT .
<213> Homo sapiens
```

```
<400> 307
Met Trp Val Cys Ser Ile Thr Asp Gln
  1             5
```

```
<210> 308
<211> 10
<212> PRT
<213> Homo sapiens
```

```
<400> 308
Leu Thr Tyr Leu Ala His Leu Leu Cys Phe
  1                      5                      10
```

```
<210> 309
<211> 10
<212> PRT
<213> Homo sapiens
```

```
<400> 309
Met Cys Ser Leu Ser Ser Glu His Leu Ala
  1             5             10
```

```
<210> 310
<211> 465
<212> .PRT
<213> Homo sapiens
```

```
<220>
<221> SITE
<222> (16)
<223> Xaa equals any of the naturally occurring L-amino acids
```

```
<220>
<221> SITE
<222> (27)
<223> Xaa equals any of the naturally occurring L-amino acids
```

<220>  
<221> SITE

&lt;222&gt; (44)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 310

Asn	Arg	Arg	Asn	Gly	Ala	Ser	Gln	Ile	Thr	Trp	Cys	Ser	Gly	Gln	Xaa
1				5					10					15	
Lys	Ser	Ser	Lys	Trp	Ala	Arg	Glu	Ile	Gly	Xaa	Tyr	Gln	Thr	Gly	Val
			20					25					30		
Tyr	Gln	Pro	Gly	Trp	Gly	Pro	Gln	Arg	His	Ala	Xaa	Gly	Glu	Ile	Ala
		35					40					45			
Thr	Arg	Ala	Ile	Ser	Met	Leu	Ala	Ile	Leu	Thr	Gly	Asn	Val	Gly	Ile
	50					55					60				
Asn	Gly	Gly	Asn	Ser	Gly	Ala	Arg	Glu	Gly	Ser	Tyr	Ser	Leu	Pro	Phe
65					70					75					80
Val	Arg	Met	Pro	Thr	Leu	Glu	Asn	Pro	Ile	Gln	Thr	Ser	Ile	Ser	Met
				85					90					95	
Phe	Met	Trp	Thr	Asp	Ala	Ile	Glu	Arg	Gly	Pro	Glu	Met	Thr	Ala	Leu
			100					105					110		
Arg	Asp	Gly	Val	Arg	Gly	Lys	Asp	Lys	Leu	Asp	Val	Pro	Ile	Lys	Met
	115						120					125			
Ile	Trp	Asn	Tyr	Ala	Gly	Asn	Cys	Leu	Ile	Asn	Gln	His	Ser	Glu	Ile
130						135					140				
Asn	Arg	Thr	His	Glu	Ile	Leu	Gln	Asp	Asp	Lys	Lys	Cys	Glu	Leu	Ile
145					150					155					160
Val	Val	Ile	Asp	Cys	His	Met	Thr	Ser	Ser	Ala	Lys	Tyr	Ala	Asp	Ile
				165					170					175	
Leu	Leu	Pro	Asp	Cys	Thr	Ala	Ser	Glu	Gln	Met	Asp	Phe	Ala	Leu	Asp
			180					185					190		
Ala	Ser	Cys	Gly	Asn	Met	Ser	Tyr	Val	Ile	Phe	Asn	Asp	Gln	Val	Ile
		195					200					205			
Lys	Pro	Arg	Phe	Glu	Cys	Lys	Thr	Ile	Tyr	Glu	Met	Thr	Ser	Glu	Leu
	210					215					220				
Ala	Lys	Arg	Leu	Gly	Val	Glu	Gln	Gln	Phe	Thr	Glu	Gly	Arg	Thr	Gln
225					230					235					240
Glu	Glu	Trp	Met	Arg	His	Leu	Tyr	Ala	Gln	Ser	Arg	Glu	Ala	Ile	Pro
			245						250					255	
Glu	Leu	Pro	Thr	Phe	Glu	Glu	Phe	Arg	Lys	Gln	Gly	Ile	Phe	Lys	Lys
			260					265					270		
Arg	Asp	Pro	Gln	Gly	His	His	Val	Ala	Tyr	Lys	Ala	Phe	Arg	Glu	Asp
		275					280					285			
Pro	Gln	Ala	Asn	Pro	Leu	Thr	Thr	Pro	Ser	Gly	Lys	Ile	Glu	Ile	Tyr
	290					295					300				

Ser Gln Ala Leu Ala Asp Ile Ala Ala Thr Trp Glu Leu Pro Glu Gly  
 305 310 315 320  
 Asp Val Ile Asp Pro Leu Pro Ile Tyr Thr Pro Gly Phe Glu Ser Tyr  
 325 330 335  
 Gln Asp Pro Leu Asn Lys Gln Tyr Pro Leu Gln Leu Thr Gly Phe His  
 340 345 350  
 Tyr Lys Ser Arg Val His Ser Thr Tyr Gly Asn Val Asp Val Leu Lys  
 355 360 365  
 Ala Ala Cys Arg Gln Glu Met Trp Ile Asn Pro Leu Asp Ala Gln Lys  
 370 375 380  
 Arg Gly Ile His Asn Gly Asp Lys Val Arg Ile Phe Asn Asp Arg Gly  
 385 390 395 400  
 Glu Val His Ile Glu Ala Lys Val Thr Pro Arg Met Met Pro Gly Val  
 405 410 415  
 Val Ala Leu Gly Glu Gly Ala Trp Tyr Asp Pro Asp Ala Lys Arg Val  
 420 425 430  
 Asp Lys Gly Gly Cys Ile Asn Val Leu Thr Thr Gln Arg Pro Ser Pro  
 435 440 445  
 Leu Ala Lys Gly Asn Pro Ser His Thr Asn Leu Val Gln Val Glu Lys  
 450 455 460  
 Val  
 465

<210> 311  
 <211> 185  
 <212> PRT  
 <213> Homo sapiens

<400> 311

Met Ala Gln Ala Asn Ser Thr Leu Gly Ala Gly Gly Trp Val Gly Asn  
 1 5 10 15  
 Gly Val Tyr Val Ser Gly Val Gln Arg Glu Tyr Asp Ala Phe Ile Thr  
 20 25 30  
 Asn Gln Leu Arg Ala Ala Gln Thr Gln Ser Ser Gly Leu Thr Ala Arg  
 35 40 45  
 Tyr Glu Gln Met Ser Lys Ile Asp Asn Met Leu Ser Thr Ser Thr Ser  
 50 55 60  
 Ser Leu Ala Thr Gln Met Gln Asp Phe Phe Thr Ser Leu Gln Thr Leu  
 65 70 75 80  
 Val Ser Asn Ala Glu Asp Pro Ala Ala Arg Gln Ala Leu Ile Gly Lys  
 85 90 95

Ser Glu Gly Leu Val Asn Gln Phe Lys Thr Thr Asp Gln Tyr Leu Arg  
 100 105 110

Asp Gln Asp Lys Gln Val Asn Ile Ala Ile Gly Ala Ser Val Asp Gln  
 115 120 125

Ile Asn Asn Tyr Ala Lys Gln Ile Ala Ser Leu Asn Asp Gln Ile Ser  
 130 135 140

Arg Leu Thr Gly Val Gly Ala Gly Ala Ser Pro Asn Asn Leu Leu Asp  
 145 150 155 160

Gln Arg Asp Gln Leu Gly Glu Arg Ile Lys Pro Asp Cys Trp Cys Arg  
 165 170 175

Ser Gln Arg Ser Gly Trp Arg His Leu  
 180 185

<210> 312  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 312  
 Met Ser His Cys Ala Trp Pro Pro Leu Leu Ile Phe Ile Thr Arg Val  
 1 5 10 15

Gln Trp Ala Thr Ala Thr Lys Cys Gln Phe Thr Ala Lys Ser Gly Ile  
 20 25 30

Gly Leu Thr Gln Gly Cys Ser Ser Val Phe Val Lys Leu Gly Leu Phe  
 35 40 45

Leu Ile Cys Pro Tyr Asp Trp Glu  
 50 55

<210> 313  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 313  
 Met Ser His Cys Ala Trp Pro Pro Leu Leu Ile Phe Ile Thr Arg Val  
 1 5 10 15

Gln Trp Ala Thr Ala Thr Lys Cys Gln Phe Thr Ala Lys Ser Gly Ile  
 20 25 30

Gly Leu Thr Gln Gly Cys Ser Ser Val Phe Val Lys Leu Gly Leu Phe  
 35 40 45

Leu Ile Cys Pro Tyr Asp Trp Glu  
 50 55

<210> 314  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 314  
 Leu Pro Ala Arg Leu Leu Gln Arg Ser Pro Arg Arg Cys Arg Arg Arg  
 1 5 10 15  
 Arg Val Pro Ser Pro Ser Leu Ala His Val Gly Arg Arg Val Gln Pro  
 20 25 30  
 Cys Tyr Ser Arg Ala Pro Pro Leu Ser Ser  
 35 40

<210> 315  
 <211> 146  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (7)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 315  
 Met Ala Ala Leu Leu Leu Xaa Pro Leu Leu Leu Leu Leu Pro Leu Leu  
 1 5 10 15  
 Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp Leu Pro Ala Ala  
 20 25 30  
 Thr Ala Ala Arg Gly Ala Leu Glu Lys Ala Ser Gly Gln Arg Arg Glu  
 35 40 45  
 Pro Glu Met Gln Arg Pro Glu Ala Ala Arg Ser Leu Pro Glu Gly Thr  
 50 55 60  
 Val Pro Pro Glu Val Glu Glu Pro Pro Pro Leu Cys His Leu Glu Gln  
 65 70 75 80  
 Leu Trp Arg Cys Ser Ser Pro Leu Ala Gln Ser Phe Cys Gly Ser Gly  
 85 90 95  
 Ser Gly Trp Pro Arg Pro Ala Cys Ala Leu Pro Leu Cys Pro Pro Pro  
 100 105 110  
 Cys Ala Gly Ala Pro Cys Cys Thr Ala Ser Ala Ala Ala Arg Ala  
 115 120 125  
 Arg Trp Cys Trp Arg Gln Ser Phe Trp Ser Pro Trp Ser Arg Thr Cys  
 130 135 140  
 Pro Pro  
 145



<210> 316  
 <211> 174  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (151)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (161)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (164)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 316  
 Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu Leu Pro Leu Leu  
     1                    5                    10                    15  
 Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp Leu Pro Ala Asp  
           20                    25                    30  
 Leu Ala Phe Ala Val Arg Ala Leu Cys Cys Lys Arg Ala Leu Arg Ala  
           35                    40                    45  
 Arg Ala Leu Ala Ala Ala Ala Asp Pro Glu Gly Pro Glu Gly Gly  
     50                    55                    60  
 Cys Ser Leu Ala Trp Arg Leu Ala Glu Leu Ala Gln Gln Arg Ala Ala  
     65                    70                    75                    80  
 His Thr Phe Leu Ile His Gly Ser Arg Arg Phe Ser Tyr Ser Glu Ala  
           85                    90                    95  
 Glu Arg Glu Ser Asn Arg Ala Ala Arg Ala Phe Leu Arg Ala Leu Gly  
          100                    105                    110  
 Trp Asp Trp Gly Pro Asp Gly Gly Asp Ser Gly Glu Gly Ser Ala Gly  
     115                    120                    125  
 Glu Gly Glu Arg Ala Ala Pro Gly Ala Gly Asp Ala Ser Gly Arg Lys  
     130                    135                    140  
 Arg Arg Gly Val Cys Arg Xaa Gly Thr Val Pro Pro Glu Gly Gly Arg  
     145                    150                    155                    160  
 Xaa Pro Pro Xaa Pro Phe Val Thr Leu Glu Ala Asn Cys Gly  
          165                    170

<210> 317  
 <211> 119  
 <212> PRT  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (14)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (78)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 317

Gln Trp Gly Gly Gly Gln Leu Met Glu Leu Val Pro Leu Xaa Cys Ala  
 1 5 10 15

Phe Pro Gly Val Gly Ser Trp Gly Trp Glu Gln Gly Lys Ala Ala Ser  
 20 25 30

Ser Leu Gly Phe Leu Leu Cys Leu Pro Arg Val Ala Ala Asn Pro Val  
 35 40 45

Pro Ala Gly Gly Ala Gly Met Ala Ser Cys Pro Gly Leu Trp Gln Glu  
 50 55 60

Thr Leu Phe Pro Leu Pro Val Gly Leu Pro Arg Leu Ser Xaa Pro Phe  
 65 70 75 80

Ser His Lys Lys Ile Trp Gly Gln Ala Arg Trp Leu Thr Pro Val Ile  
 85 90 95

Pro Ala Leu Trp Glu Ala Glu Ala Gly Ser His Lys Val Arg Arg Ser  
 100 105 110

Gly Pro Ser Trp Leu Ile Arg  
 115

&lt;210&gt; 318

&lt;211&gt; 234

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 318

Met Ala Ala Leu Leu Leu Pro Leu Leu Leu Leu Pro Leu Leu  
 1 5 10 15

Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp Leu Pro Ala Asp  
 20 25 30

Leu Ala Phe Ala Val Arg Ala Leu Cys Cys Lys Arg Ala Leu Arg Ala  
 35 40 45

Arg Ala Leu Ala Ala Ala Ala Asp Pro Glu Gly Pro Glu Gly Gly  
 50 55 60

Cys Ser Leu Ala Trp Arg Leu Ala Glu Leu Ala Gln Gln Arg Ala Ala  
 65 70 75 80

His Thr Phe Leu Ile His Gly Ser Arg Arg Phe Ser Tyr Ser Glu Ala

				85					90					95	
Glu	Arg	Glu	Ser	Asn	Arg	Ala	Ala	Arg	Ala	Phe	Leu	Arg	Ala	Leu	Gly
			100					105					110		
Trp	Asp	Trp	Gly	Pro	Asp	Gly	Gly	Asp	Ser	Gly	Glu	Gly	Ser	Ala	Gly
		115					120					125			
Glu	Gly	Glu	Arg	Ala	Ala	Pro	Gly	Ala	Gly	Asp	Ala	Ala	Ala	Gly	Ser
	130					135					140				
Gly	Ala	Glu	Phe	Ala	Gly	Gly	Asp	Gly	Ala	Ala	Arg	Gly	Gly	Gly	Ala
145					150					155					160
Ala	Ala	Leu	Cys	His	Leu	Glu	Gln	Leu	Trp	Arg	Cys	Ser	Ser	Pro	Leu
				165					170					175	
Ala	Gln	Ser	Phe	Cys	Gly	Ser	Gly	Ser	Gly	Trp	Pro	Arg	Pro	Ala	Cys
			180					185					190		
Ala	Leu	Pro	Leu	Cys	Pro	Pro	Pro	Cys	Ala	Gly	Ala	Pro	Cys	Cys	Thr
		195					200					205			
Ala	Ser	Ala	Ala	Ala	Ala	Arg	Ala	Arg	Trp	Cys	Trp	Arg	Gln	Ser	Phe
	210					215					220				
Trp	Ser	Pro	Trp	Ser	Arg	Thr	Cys	Pro	Pro						
225					230										

&lt;210&gt; 319

&lt;211&gt; 683

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 319

Met	Ala	Ala	Leu	Leu	Leu	Leu	Pro	Leu	Leu	Leu	Leu	Leu	Pro	Leu	Leu
1				5					10					15	
Leu	Leu	Lys	Leu	His	Leu	Trp	Pro	Gln	Leu	Arg	Trp	Leu	Pro	Ala	Asp
		20						25					30		
Leu	Ala	Phe	Ala	Val	Arg	Ala	Leu	Cys	Cys	Lys	Arg	Ala	Leu	Arg	Ala
		35					40					45			
Arg	Ala	Leu	Ala	Ala	Ala	Ala	Ala	Asp	Pro	Glu	Gly	Pro	Glu	Gly	Gly
	50					55					60				
Cys	Ser	Leu	Ala	Trp	Arg	Leu	Ala	Glu	Leu	Ala	Gln	Gln	Arg	Ala	Ala
65					70					75				80	
His	Thr	Phe	Leu	Ile	His	Gly	Ser	Arg	Arg	Phe	Ser	Tyr	Ser	Glu	Ala
			85						90					95	
Glu	Arg	Glu	Ser	Asn	Arg	Ala	Ala	Arg	Ala	Phe	Leu	Arg	Ala	Leu	Gly
			100					105					110		
Trp	Asp	Trp	Gly	Pro	Asp	Gly	Gly	Asp	Ser	Gly	Glu	Gly	Ser	Ala	Gly
		115					120					125			

Glu Gly Glu Arg Ala Ala Pro Gly Ala Gly Asp Ala Ala Ala Gly Ser  
 130 135 140  
 Gly Ala Glu Phe Ala Gly Gly Asp Gly Ala Ala Arg Gly Gly Gly Ala  
 145 150 155 160  
 Ala Ala Pro Leu Ser Pro Gly Ala Thr Val Ala Leu Leu Leu Pro Ala  
 165 170 175  
 Gly Pro Glu Phe Leu Trp Leu Trp Phe Gly Leu Ala Lys Ala Gly Leu  
 180 185 190  
 Arg Thr Ala Phe Val Pro Thr Ala Leu Arg Arg Gly Pro Leu Leu His  
 195 200 205  
 Cys Leu Arg Ser Cys Gly Ala Arg Ala Leu Val Leu Ala Pro Glu Phe  
 210 215 220  
 Leu Glu Ser Leu Glu Pro Asp Leu Pro Ala Leu Arg Ala Met Gly Leu  
 225 230 235 240  
 His Leu Trp Ala Ala Gly Pro Gly Thr His Pro Ala Gly Ile Ser Asp  
 245 250 255  
 Leu Leu Ala Glu Val Ser Ala Glu Val Asp Gly Pro Val Pro Gly Tyr  
 260 265 270  
 Leu Ser Ser Pro Gln Ser Ile Thr Asp Thr Cys Leu Tyr Ile Phe Thr  
 275 280 285  
 Ser Gly Thr Thr Gly Leu Pro Lys Ala Ala Arg Ile Ser His Leu Lys  
 290 295 300  
 Ile Leu Gln Cys Gln Gly Phe Tyr Gln Leu Cys Gly Val His Gln Glu  
 305 310 315 320  
 Asp Val Ile Tyr Leu Ala Leu Pro Leu Tyr His Met Ser Gly Ser Leu  
 325 330 335  
 Leu Gly Ile Val Gly Cys Met Gly Ile Gly Ala Thr Val Val Leu Lys  
 340 345 350  
 Ser Lys Phe Ser Ala Gly Gln Phe Trp Glu Asp Cys Gln Gln His Arg  
 355 360 365  
 Val Thr Val Phe Gln Tyr Ile Gly Glu Leu Cys Arg Tyr Leu Val Asn  
 370 375 380  
 Gln Pro Pro Ser Lys Ala Glu Arg Gly His Lys Val Arg Leu Ala Val  
 385 390 395 400  
 Gly Ser Gly Leu Arg Pro Asp Thr Trp Glu Arg Phe Val Arg Arg Phe  
 405 410 415  
 Gly Pro Leu Gln Val Leu Glu Thr Tyr Gly Leu Thr Glu Gly Asn Val  
 420 425 430  
 Ala Thr Ile Asn Tyr Thr Gly Gln Arg Gly Ala Val Gly Arg Ala Ser  
 435 440 445

Trp Leu Tyr Lys His Ile Phe Pro Phe Ser Leu Ile Arg Tyr Asp Val  
 450 455 460  
 Thr Thr Gly Glu Pro Ile Arg Asp Pro Gln Gly His Cys Met Ala Thr  
 465 470 475 480  
 Ser Pro Gly Glu Pro Gly Leu Leu Val Ala Pro Val Ser Gln Gln Ser  
 485 490 495  
 Pro Phe Leu Gly Tyr Ala Gly Gly Pro Glu Leu Ala Gln Gly Lys Leu  
 500 505 510  
 Leu Lys Asp Val Phe Arg Pro Gly Asp Val Phe Phe Asn Thr Gly Asp  
 515 520 525  
 Leu Leu Val Cys Asp Asp Gln Gly Phe Leu Arg Phe His Asp Arg Thr  
 530 535 540  
 Gly Asp Thr Phe Arg Trp Lys Gly Glu Asn Val Ala Thr Thr Glu Val  
 545 550 555 560  
 Ala Glu Val Phe Glu Ala Leu Asp Phe Leu Gln Glu Val Asn Val Tyr  
 565 570 575  
 Gly Val Thr Val Pro Gly His Glu Gly Arg Ala Gly Met Ala Ala Leu  
 580 585 590  
 Val Leu Arg Pro Pro His Ala Leu Asp Leu Met Gln Leu Tyr Thr His  
 595 600 605  
 Val Ser Glu Asn Leu Pro Pro Tyr Ala Arg Pro Arg Phe Leu Arg Leu  
 610 615 620  
 Gln Glu Ser Leu Ala Thr Thr Glu Thr Phe Lys Gln Gln Lys Val Arg  
 625 630 635 640  
 Met Ala Asn Glu Gly Phe Asp Pro Ser Thr Leu Ser Asp Pro Leu Tyr  
 645 650 655  
 Val Leu Asp Gln Ala Val Gly Ala Tyr Leu Pro Leu Thr Thr Ala Arg  
 660 665 670  
 Tyr Ser Ala Leu Leu Ala Gly Asn Leu Arg Ile  
 675 680

&lt;210&gt; 320

&lt;211&gt; 162

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (157)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 320

Met Gly Pro Arg Phe Thr Met Leu Leu Ala Met Trp Leu Val Cys Gly

[illegible]

```
<210> 321
<211> 509
<212> PRT
<213> Homo sapiens
```

$\langle 400 \rangle \cdot 321$

Met	Thr	Trp	Arg	Met	Gly	Pro	Arg	Phe	Thr	Met	Leu	Leu	Ala	Met	Trp
1				5					10					15	
Leu	Val	Cys	Gly	Ser	Glu	Pro	His	Pro	His	Ala	Thr	Ile	Arg	Gly	Ser
			20					25					30		
His	Gly	Gly	Arg	Lys	Val	Pro	Leu	Val	Ser	Pro	Asp	Ser	Ser	Arg	Pro
		35					40					45			
Ala	Arg	Phe	Leu	Arg	His	Thr	Gly	Arg	Ser	Arg	Gly	Ile	Glu	Arg	Ser
	50					55					60				
Thr	Leu	Glu	Glu	Pro	Asn	Leu	Gln	Pro	Leu	Gln	Arg	Arg	Arg	Ser	Val
65					70					75					80
Pro	Val	Leu	Arg	Leu	Ala	Arg	Pro	Thr	Glu	Pro	Pro	Ala	Arg	Ser	Asp
				85					90					95	
Ile	Asn	Gly	Ala	Ala	Val	Arg	Pro	Glu	Gln	Arg	Pro	Ala	Ala	Arg	Gly
			100					105					110		

Ser Pro Arg Glu Met Ile Arg Asp Glu Gly Ser Ser Ala Arg Ser Arg  
 115 120 125  
 Met Leu Arg Phe Pro Ser Gly Ser Ser Ser Pro Asn Ile Leu Ala Ser  
 130 135 140  
 Phe Ala Gly Lys Asn Arg Val Trp Val Ile Ser Ala Pro His Ala Ser  
 145 150 155 160  
 Glu Gly Tyr Tyr Arg Leu Met Met Ser Leu Leu Lys Asp Asp Val Tyr  
 165 170 175  
 Cys Glu Leu Ala Glu Arg His Ile Gln Gln Ile Val Leu Phe His Gln  
 180 185 190  
 Ala Gly Glu Glu Gly Gly Lys Val Arg Arg Ile Thr Ser Glu Gly Gln  
 195 200 205  
 Ile Leu Glu Gln Pro Leu Asp Pro Ser Leu Ile Pro Lys Leu Met Ser  
 210 215 220  
 Phe Leu Lys Leu Glu Lys Gly Lys Phe Gly Met Val Leu Leu Lys Lys  
 225 230 235 240  
 Thr Leu Gln Val Glu Glu Arg Tyr Pro Tyr Pro Val Arg Leu Glu Ala  
 245 250 255  
 Met Tyr Glu Val Ile Asp Gln Gly Pro Ile Arg Arg Ile Glu Lys Ile  
 260 265 270  
 Arg Gln Lys Gly Phe Val Gln Lys Cys Lys Ala Ser Gly Val Glu Gly  
 275 280 285  
 Gln Val Val Ala Glu Gly Asn Asp Gly Gly Gly Gly Ala Gly Arg Pro  
 290 295 300  
 Ser Leu Gly Ser Glu Lys Lys Lys Glu Asp Pro Arg Arg Ala Gln Val  
 305 310 315 320  
 Pro Pro Thr Arg Glu Ser Arg Val Lys Val Leu Arg Lys Leu Ala Ala  
 325 330 335  
 Thr Ala Pro Ala Phe Pro Gln Pro Pro Ser Thr Pro Arg Ala Thr Thr  
 340 345 350  
 Leu Pro Pro Ala Pro Ala Thr Thr Val Thr Arg Ser Thr Ser Arg Ala  
 355 360 365  
 Val Thr Val Ala Ala Arg Pro Met Thr Thr Thr Ala Phe Pro Thr Thr  
 370 375 380  
 Gln Arg Pro Trp Thr Pro Ser Pro Ser His Arg Pro Pro Thr Thr Thr  
 385 390 395 400  
 Glu Val Ile Thr Ala Arg Arg Pro Ser Val Ser Glu Asn Leu Tyr Pro  
 405 410 415  
 Pro Ser Arg Lys Asp Gln His Arg Glu Arg Pro Gln Thr Thr Arg Arg  
 420 425 430

Pro Ser Lys Ala Thr Ser Leu Glu Ser Phe Thr Asn Ala Pro Pro Thr  
 435 440 445

Thr Ile Ser Glu Pro Ser Thr Arg Ala Ala Gly Pro Gly Arg Phe Arg  
 450 455 460

Asp Asn Arg Met Asp Arg Arg Glu His Gly His Arg Asp Pro Asn Val  
 465 470 475 480

Val Pro Gly Pro Pro Lys Pro Ala Lys Glu Lys Pro Pro Lys Lys Lys  
 485 490 495

Ala Gln Asp Lys Ile Leu Ser Asn Glu Tyr Glu Glu Val  
 500 505

&lt;210&gt; 322

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (5)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 322

Pro Pro His Leu Xaa Ser Phe Glu Phe Leu Lys Asn Val Gln Leu Arg  
 1 5 10 15

Pro Asp Thr Val Ala His Thr Cys Asp Pro Gly Thr Leu Gly Gly Arg  
 20 25 30

Gly Trp Trp Ile Thr Gly Ser Gly Asp Arg Asp Ile Leu Ala Asn Thr  
 35 40 45

Val Lys Arg Arg Leu Tyr Arg Lys Cys Arg Arg Leu Ala Gly His Gly  
 50 55 60

Gly Gly Arg Leu  
 65

&lt;210&gt; 323

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 323

Met Pro Asn Gln Phe Trp Lys Leu His Ile Leu Leu Phe Leu Leu Phe  
 1 5 10 15

Phe Leu Phe Pro Leu Val Gln Leu Cys Ile Phe Ile Leu Ile Ser Asn  
 20 25 30

Lys Glu Lys Lys Asn Val Cys Thr Leu Arg Lys Thr Tyr Ile Val Arg  
 35 40 45



His Phe Leu Trp Leu Arg Ser Phe Gln Val  
 50 55

<210> 324  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 324  
 Met Gln Val Phe Ser Ala Leu Leu Tyr Ser Leu Met His Phe Tyr Leu  
 1 5 10 15

Pro Ser Phe Thr Leu Glu Met Tyr Leu Asn Thr Leu Leu Ser His Asp  
 20 25 30

Leu Leu Ser Phe Phe His Cys Ser Gly Leu Val Phe Phe Val Tyr Phe  
 35 40 45

Lys Ser Val Thr Gly Leu Phe Ser Gly Val  
 50 55

<210> 325  
 <211> 1  
 <212> PRT  
 <213> Homo sapiens

<400> 325  
 Ile  
 1

<210> 326  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 326  
 Ile Phe Thr Cys Val Leu Tyr  
 1 5

<210> 327  
 <211> 41  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (16)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 327  
 Gln Thr Val Ser Ala Phe Leu Pro Pro Leu Phe Tyr Val Thr Phe Xaa

1                      5                      10                      15  
Leu Gly Lys Ile Asn Tyr Thr Lys Tyr His Ile Ile Pro Ser Tyr Lys  
                20                      25                      30

Leu Leu Pro Glu Asn Lys Ser Cys Val  
35 40

```
<210> 328
<211> 58
<212> PRT
<213> Homo sapiens
```

```
<400> 328
Met Gln Val Phe Ser Ala Leu Leu Tyr Ser Leu Met His Phe Tyr Leu
  1             5             10             15
```

Pro Ser Phe Thr Leu Glu Met Tyr Leu Asn Thr Leu Leu Ser His Asp  
20 25 30

Leu Leu Ser Phe Phe His Cys Ser Gly Leu Val Phe Phe Val Tyr Phe  
35 40 45

Lys Ser Val Thr Gly Leu Phe Ser Gly Val  
50 55

```
<210> 329
<211> 14
<212> PRT
<213> Homo sapiens
```

```
<220>
<221> SITE
<222> (7)
<223> Xaa equals any of the naturally occurring L-amino acids
```

<400> 329  
Met Met Pro Ala Tyr Pro Xaa Leu Leu Ala Trp Ile Leu Phe  
1 5 10

```
<210> 330
<211> 32
<212> PRT
<213> Homo sapiens
```

<400> 330  
Ala Trp Ser His Leu Ser Ile Leu Leu Asn Tyr Lys Leu Gln Arg Gln  
1 5 10 15

Glu Trp His Leu Phe Thr Tyr Phe Glu Phe Val Cys Asn Cys Leu Asp  
20 25 30

<210> 331  
 <211> 188  
 <212> PRT  
 <213> Homo sapiens

<400> 331

```

Met Glu Pro Ser Leu Val His Ile Leu Val Trp Val Ser Val Pro Pro
 1           5           10           15

Leu Phe Leu Cys Leu Thr His Ser Arg Ser Ile Asn His Asn Gln Asp
           20           25           30

Gly Leu Asn Leu Thr Pro Leu Leu Gln Met Pro His Gln Leu Thr Asp
           35           40           45

Ala Ser Gly Val Ile Lys Ala Pro Ala Cys His Pro Thr Val Asn Thr
           50           55           60

Asn Pro His Lys Glu Asn Glu His Ala Phe Leu Phe Ala Gly Cys Cys
 65           70           75           80

Thr His Ser Leu Asn Arg Val Gly Thr Trp Val Pro Pro Leu Phe Lys
           85           90           95

Val Phe Arg Phe Leu Leu Arg Gly Thr Ser Ala Ile Ala Thr Phe Ser
          100          105          110

Gly His Phe Phe Ser Asp Glu Ala Phe Tyr Pro Gly Glu Pro Gly Arg
          115          120          125

Leu Gln Gly Asn Gly Val Pro Trp Gln Leu Thr Val Thr Gly Gln Gly
          130          135          140

Phe Asp Tyr Asp Lys Glu Asp Lys Arg Arg Glu Ala Pro His Gly Leu
          145          150          155          160

Trp Leu Gln His Tyr Arg Ala Ala Arg Asp Pro Arg Ala Trp Val Ser
          165          170          175

Trp Trp Ser Thr Phe Cys Asp Pro Gly Glu Glu Pro
          180          185

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<210> 332  
 <211> 188  
 <212> PRT  
 <213> Homo sapiens

<400> 332

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Met Glu Pro Ser Leu Val His Ile Leu Val Trp Val Ser Val Pro Pro
 1           5           10           15

Leu Phe Leu Cys Leu Thr His Ser Arg Ser Ile Asn His Asn Gln Asp
           20           25           30

Gly Leu Asn Leu Thr Pro Leu Leu Gln Met Pro His Gln Leu Thr Asp

```

35                      40                      45  
 Ala Ser Gly Val Ile Lys Ala Pro Ala Cys His Pro Thr Val Asn Thr  
     50                      55                      60  
 Asn Pro His Lys Glu Asn Glu His Ala Phe Leu Phe Ala Gly Cys Cys  
     65                      70                      75                      80  
 Thr His Ser Leu Asn Arg Val Gly Thr Trp Val Pro Pro Leu Phe Lys  
                     85                      90                      95  
 Val Phe Arg Phe Leu Leu Arg Gly Thr Ser Ala Ile Ala Thr Phe Ser  
                     100                      105                      110  
 Gly His Phe Phe Ser Asp Glu Ala Phe Tyr Pro Gly Glu Pro Gly Arg  
                     115                      120                      125  
 Leu Gln Gly Asn Gly Val Pro Trp Gln Leu Thr Val Thr Gly Gln Gly  
     130                      135                      140  
 Phe Asp Tyr Asp Lys Glu Asp Lys Arg Arg Glu Ala Pro His Gly Leu  
     145                      150                      155                      160  
 Trp Leu Gln His Tyr Arg Ala Ala Arg Asp Pro Arg Ala Trp Val Ser  
                     165                      170                      175  
 Trp Trp Ser Thr Phe Cys Asp Pro Gly Glu Glu Pro  
                     180                      185

<210> 333  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

<400> 333  
 Met Leu Cys Val Cys Val Leu Trp Met Phe Thr Val Pro Gly Ser Arg  
     1                      5                      10                      15  
 Lys Asp Val Gly Glu Ala Ala Pro Ala Ser Gly Thr Gly Gln Glu Cys  
                     20                      25                      30  
 Arg Met His Gly Ser Trp Ser Gly Arg Ser Leu Gly  
                     35                      40

<210> 334  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

<400> 334  
 Met Leu Cys Val Cys Val Leu Trp Met Phe Thr Val Pro Gly Ser Arg  
     1                      5                      10                      15  
 Lys Asp Val Gly Glu Ala Ala Pro Ala Ser Gly Thr Gly Gln Glu Cys  
                     20                      25                      30

Arg Met His Gly Ser Trp Ser Gly Arg Ser Leu Gly  
                   35                                  40

<210> 335

<211> 249

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (147)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (150)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (196)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (222)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 335

Met Val Cys Val Phe Met Cys Ile Val Gly Val Cys Val Ala Cys Cys  
       1                  5                  10                  15

Ala Cys Val Tyr Cys Gly Cys Leu Leu Ser Arg Ala Val Glu Arg Thr  
                   20                  25                  30

Ser Gly Lys Gln Pro Gln His Gln Gly Gln Ala Arg Ser Ala Glu Cys  
           35                  40                  45

Met Glu Ala Gly Gln Val Gly Ala Trp Asp Glu Gly Ser Thr Glu Met  
       50                  55                  60

Gln Gly Cys Gln Gly Pro Trp Asn Gln Glu Pro Met Ile Lys Ala Thr  
       65                  70                  75                  80

Val His Thr Ala Leu Glu Ala Lys Asp Ile Phe Ile Ser Gln Gly Leu  
                   85                  90                  95

Lys Ser Met Gly Gln Gly Trp Ala Pro Gly Gln Asp Trp Gly Tyr Arg  
           100                  105                  110

Val Asp Gln Ser Pro Ser Leu Pro Pro Gly Ala Tyr Pro His Pro Phe  
       115                  120                  125

Thr Ser Gln Val Ser Pro Pro Gln Pro Leu Gly Glu Leu Leu Leu Ile  
       130                  135                  140

Pro Gln Xaa Val Ala Xaa Val Thr Leu Leu Pro Glu Ala Ser Pro His  
       145                  150                  155                  160

Pro Leu Lys His Pro Leu Pro Ala Ala His Leu Gln His Ser Gln Arg  
 165 170 175  
 Ala Pro Trp Pro Val Ser Thr Gly Leu Ser Leu Leu Gly Gly Ala Gly  
 180 185 190  
 Ala Glu Gln Xaa Pro Gly Leu Gly Val Pro Ala Pro Arg Ser Thr Pro  
 195 200 205  
 Ser Pro Thr Ala Ser Leu Phe Asn Leu Arg Gln Ala Val Xaa Leu Leu  
 210 215 220  
 Ser Leu Thr Phe Pro Leu Cys Lys Met Arg Glu Gly Thr Ala Pro Ser  
 225 230 235 240  
 Lys Pro Ser Phe Ser Leu Lys Pro Leu  
 245

<210> 336  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 336  
 Met Lys Ile Val Thr Thr Leu Tyr Cys Leu Phe Val Phe Leu Leu Asn  
 1 5 10 15  
 Cys Phe Gly Val Gly Gly Ser Cys Ile Phe Leu Ser Asn Arg Thr Pro  
 20 25 30  
 Gly Phe Ser Trp Ala His Asp Cys Pro Gln  
 35 40

<210> 337  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 337  
 Met Lys Ile Val Thr Thr Leu Tyr Cys Leu Phe Val Phe Leu Leu Asn  
 1 5 10 15  
 Cys Phe Gly Val Gly Gly Ser Cys Ile Phe Leu Ser Asn Arg Thr Pro  
 20 25 30  
 Gly Phe Ser Trp Ala His Asp Cys Pro Gln  
 35 40

<210> 338  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 338

Met Lys Ile Val Thr Thr Leu Tyr Cys Leu Phe Val Phe Leu Leu Asn  
 1 5 10 15

Cys Phe Gly Val Gly Gly Ser Cys Ile Phe Leu Ser Asn Arg Thr Pro  
 20 25 30

Gly Phe Ser Trp Ala His Asp Cys Pro Gln  
 35 40

&lt;210&gt; 339

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 339

Leu Leu Ser Asp Val Cys Pro Ser Leu Thr Val Pro Cys Ser Ser His  
 1 5 10 15

Val Phe Thr Asp Cys Leu Leu Tyr Met Gln Ser Gln Arg Val Gly Pro  
 20 25 30

Gly Leu Glu Leu Ser Pro His Leu Pro Leu Leu Ala Pro Pro Ser Ser  
 35 40 45

Trp Ala Leu Ser Ser Asn Thr Val Ile Leu Ser Pro Thr Trp Leu Ile  
 50 55 60

Leu Ser Phe Leu Pro Ser Asn Gly His Leu Gln Lys Lys Lys Lys Lys  
 65 70 75 80

Thr Arg

&lt;210&gt; 340

&lt;211&gt; 265

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (112)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (113)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (193)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (222)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (238)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (258)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 340

Met	Asp	Leu	Leu	Gln	Phe	Leu	Ala	Phe	Leu	Phe	Val	Leu	Leu	Leu	Ser
1				5					10					15	

Gly	Met	Gly	Ala	Thr	Gly	Thr	Leu	Arg	Thr	Ser	Leu	Asp	Pro	Ser	Leu
			20					25					30		

Glu	Ile	Tyr	Lys	Lys	Met	Phe	Glu	Val	Lys	Arg	Arg	Glu	Gln	Leu	Leu
		35					40					45			

Ala	Leu	Lys	Asn	Leu	Ala	Gln	Leu	Asn	Asp	Ile	His	Gln	Gln	Tyr	Lys
	50					55					60				

Ile	Leu	Asp	Val	Met	Leu	Lys	Gly	Leu	Phe	Lys	Val	Leu	Glu	Asp	Ser
65					70					75					80

Arg	Thr	Val	Leu	Thr	Ala	Ala	Asp	Val	Leu	Pro	Asp	Gly	Pro	Phe	Pro
				85					90					95	

Gln	Asp	Glu	Lys	Leu	Lys	Asp	Ala	Phe	Ser	His	Val	Val	Glu	Asn	Xaa
			100					105					110		

Xaa	Phe	Phe	Gly	Asp	Val	Val	Leu	Arg	Phe	Pro	Lys	Ile	Val	His	Tyr
	115						120					125			

Tyr	Phe	Asp	His	Asn	Ser	Asn	Trp	Asn	Leu	Leu	Ile	Arg	Trp	Gly	Ile
	130					135					140				

Ser	Phe	Cys	Asn	Gln	Thr	Gly	Val	Phe	Asn	Gln	Gly	Pro	His	Ser	Pro
145					150					155					160

Ile	Leu	Ser	Leu	Met	Ala	Gln	Glu	Leu	Gly	Ile	Ser	Glu	Lys	Asp	Ser
				165					170					175	

Asn	Phe	Gln	Asn	Pro	Phe	Lys	Ile	Asp	Arg	Thr	Glu	Phe	Ile	Pro	Ser
			180					185					190		

Xaa	Asp	Pro	Phe	Gln	Lys	Ala	Leu	Arg	Glu	Glu	Glu	Lys	Arg	Arg	Lys
	195						200					205			

Lys	Glu	Glu	Lys	Arg	Lys	Glu	Ile	Arg	Lys	Gly	Pro	Lys	Xaa	Leu	Pro
	210					215					220				

Asp	Ser	His	Leu	Glu	Leu	Leu	Gly	Pro	Trp	Ser	Ser	Phe	Xaa	Val	Gln
225					230					235					240

Gly	Ala	Thr	Arg	Arg	Gln	Val	Arg	Glu	Gly	Arg	Arg	Gly	Trp	Ser	Phe
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



245 250 255

Gly Xaa Trp Leu Glu Glu Ala Pro Phe  
260 265

<210> 341  
<211> 229  
<212> PRT  
<213> Homo sapiens

<400> 341

Met Asp Leu Leu Gln Phe Leu Ala Phe Leu Phe Val Leu Leu Leu Ser  
1 5 10 15

Gly Met Gly Ala Thr Gly Thr Leu Arg Thr Ser Leu Asp Pro Ser Leu  
20 25 30

Glu Ile Tyr Lys Lys Met Phe Glu Val Lys Arg Arg Glu Gln Leu Leu  
35 40 45

Ala Leu Lys Asn Leu Ala Gln Leu Asn Asp Ile His Gln Gln Tyr Lys  
50 55 60

Ile Leu Asp Val Met Leu Lys Gly Leu Phe Lys Val Leu Glu Asp Ser  
65 70 75 80

Arg Thr Val Leu Thr Ala Ala Asp Val Leu Pro Asp Gly Pro Cys Pro  
85 90 95

Gln Asp Glu Lys Leu Lys Asp Ala Phe Ser His Val Val Glu Asn Thr  
100 105 110

Ala Phe Phe Gly Asp Val Val Leu Arg Phe Pro Arg Ile Val His Tyr  
115 120 125

Tyr Phe Asp His Asn Ser Asn Trp Asn Leu Leu Ile Arg Trp Gly Ile  
130 135 140

Ser Phe Cys Asn Gln Thr Gly Val Phe Asn Gln Gly Pro His Ser Pro  
145 150 155 160

Ile Leu Ser Leu Met Ala Gln Glu Leu Gly Ile Ser Glu Lys Asp Ser  
165 170 175

Asn Phe Gln Asn Pro Phe Lys Ile Asp Arg Thr Glu Phe Ile Pro Ser  
180 185 190

Thr Asp Pro Phe Gln Lys Ala Leu Arg Glu Glu Glu Lys Arg Arg Lys  
195 200 205

Lys Glu Glu Lys Arg Lys Glu Ile Arg Lys Gly Pro Arg Ile Ser Arg  
210 215 220

Ser Gln Ser Glu Leu  
225

<210> 342  
 <211> 88  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (1)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (2)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (19)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 342  
 Xaa Xaa Glu Asp Arg Leu Pro Gly Pro Ile Leu Pro Arg Gly Phe Gln  
     1                    5                    10                    15  
 Leu Trp Xaa Ser Leu Gly Gly Glu Phe Pro Arg Leu Gln Ile Arg Pro  
                     20                    25                    30  
 Met Cys His Ala Pro Asn Cys Leu Ser Val Arg Pro Ser Val Arg Pro  
                     35                    40                    45  
 Ser Val His Pro Ser Ile His Pro Ser Ile Pro Val Thr Ile Ser Thr  
                     50                    55                    60  
 Pro Met Cys Gln Met Pro Tyr Ile Ser Asn Leu Met Gln Val Pro Pro  
                     65                    70                    75                    80  
 Pro Pro Cys Pro Leu Leu Ile Gln  
                     85

<210> 343  
 <211> 162  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (138)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (152)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 343  
 Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys  
     1                    5                    10                    15

Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr  
                   20                  25                  30  
 Glu Gly Leu Asn Ser Thr Glu Ala Ala Leu Ala Thr Phe Gly Thr Phe  
                   35                  40                  45  
 Pro Ser Thr Arg Pro Pro Gly Thr Pro Arg Ala Pro Gly Pro Ser Ser  
                   50                  55                  60  
 Gly Pro Arg Pro Thr Pro Val Thr Asp Val Ala Val Leu Cys Val Cys  
                   65                  70                  75                  80  
 Asp Leu Ser Pro Ala Gln Cys Asp Ile Asn Cys Cys Cys Asp Pro Asp  
                   85                  90                  95  
 Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val  
                   100                  105                  110  
 Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser  
                   115                  120                  125  
 Leu Asn Phe Thr Ala Asn Pro Pro Gln Xaa Val Phe Glu Leu Val Asp  
                   130                  135                  140  
 Gln Ile Asn Pro Ser Ile Phe Xaa Ile His Ile Thr Asn Cys Arg Cys  
                   145                  150                  155                  160  
 Ser Val

&lt;210&gt; 344

&lt;211&gt; 274

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (56)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 344

Pro Phe Tyr Ser Ser Pro Glu Ile Leu Arg Val Pro Asp Ser Arg Lys  
                   1                  5                  10                  15  
 Lys Val Pro Ile Thr Val Gln Ser Ile Val Ile Gln Ser Leu Asn Lys  
                   20                  25                  30  
 Thr Leu Thr Arg Arg Glu Asp Thr Asp Val Leu Gln Pro Thr Leu Val  
                   35                  40                  45  
 Asn Ala Gly His Phe Ser Leu Xaa Val Asn Val Val Leu Glu Val Lys  
                   50                  55                  60  
 Tyr Ser Leu Thr Tyr Thr Asp Ala Gly Glu Val Thr Lys Ala Asp Leu  
                   65                  70                  75                  80  
 Ser Phe Val Leu Gly Thr Val Ser Ser Val Val Val Pro Leu Gln Gln  
                   85                  90                  95

Lys Phe Glu Ile His Phe Leu Gln Glu Asn Thr Gln Pro Val Pro Leu  
                     100                    105                    110  
 Ser Gly Asn Pro Gly Tyr Val Val Gly Leu Pro Leu Ala Ala Gly Phe  
                     115                    120                    125  
 Gln Pro His Lys Gly Gly Ala Leu Pro Cys Gln Leu Val Ala Gln Lys  
                     130                    135                    140  
 Val Lys Ser Leu Leu Trp Gly Gln Gly Phe Pro Asp Tyr Val Ala Pro  
                     145                    150                    155                    160  
 Phe Gly Asn Ser Gln Ala Gln Asp Met Leu Asp Trp Val Pro Ile His  
                     165                    170                    175  
 Phe Ile Thr Gln Ser Phe Asn Arg Lys Asp Ser Cys Gln Leu Pro Gly  
                     180                    185                    190  
 Ala Leu Val Ile Glu Val Lys Trp Thr Lys Tyr Gly Ser Leu Leu Asn  
                     195                    200                    205  
 Pro Gln Ala Lys Ile Val Asn Val Thr Ala Asn Leu Ile Ser Ser Ser  
                     210                    215                    220  
 Phe Pro Glu Ala Asn Ser Gly Asn Glu Arg Thr Ile Leu Ile Ser Thr  
                     225                    230                    235                    240  
 Ala Val Thr Phe Val Asp Val Ser Ala Pro Ala Glu Ala Gly Phe Arg  
                     245                    250                    255  
 Ala Pro Pro Ala Ile Asn Ala Arg Leu Pro Phe Asn Phe Phe Phe Pro  
                     260                    265                    270  
 Phe Val

<210> 345  
 <211> 254  
 <212> PRT  
 <213> Homo sapiens  
  
 <220>  
 <221> SITE  
 <222> (5)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (17)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>

&lt;221&gt; SITE

&lt;222&gt; (24)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 345

Thr	His	Leu	Phe	Xaa	Cys	Asn	Ser	Tyr	Tyr	Lys	Pro	Leu	Thr	Xaa	His
1				5					10					15	

Xaa	Pro	Phe	Ile	Ile	Gln	Lys	Xaa	Pro	Asp	Glu	Asn	Asn	Phe	Asp	Thr
			20					25						30	

Leu	Met	Lys	Thr	Ser	Asp	Gly	Phe	Thr	Leu	Asn	Ala	Glu	Ser	Tyr	Val
		35					40					45			

Ser	Phe	Thr	Thr	Lys	Leu	Asp	Ile	Pro	Thr	Ala	Ala	Lys	Tyr	Glu	Tyr
	50					55					60				

Gly	Val	Pro	Leu	Gln	Thr	Ser	Asp	Ser	Phe	Leu	Arg	Phe	Pro	Ser	Ser
65					70					75					80

Leu	Thr	Ser	Ser	Leu	Cys	Thr	Asp	Asn	Asn	Pro	Ala	Ala	Phe	Leu	Val
				85					90					95	

Asn	Gln	Ala	Val	Lys	Cys	Thr	Arg	Lys	Ile	Asn	Leu	Glu	Gln	Cys	Glu
			100					105					110		

Glu	Ile	Glu	Ala	Leu	Ser	Met	Ala	Phe	Tyr	Ser	Ser	Pro	Glu	Ile	Leu
		115					120					125			

Arg	Val	Pro	Asp	Ser	Arg	Lys	Lys	Val	Pro	Ile	Thr	Val	Gln	Ser	Ile
	130					135					140				

Val	Ile	Gln	Ser	Leu	Asn	Lys	Thr	Leu	Thr	Arg	Arg	Glu	Asp	Thr	Asp
145					150					155					160

Val	Leu	Gln	Pro	Thr	Leu	Val	Asn	Ala	Gly	His	Phe	Ser	Leu	Cys	Val
				165					170					175	

Asn	Val	Val	Leu	Glu	Asp	Ser	Cys	Gln	Leu	Pro	Gly	Ala	Leu	Val	Ile
			180					185					190		

Glu	Val	Lys	Trp	Thr	Lys	Tyr	Gly	Ser	Leu	Leu	Asn	Pro	Gln	Ala	Lys
		195					200					205			

Ile	Val	Asn	Val	Thr	Ala	Asn	Leu	Ile	Ser	Ser	Ser	Phe	Pro	Glu	Asn
	210					215					220				

Ala	Gln	Met	His	Gln	Phe	Leu	Asn	Ile	His	Val	Lys	Phe	Glu	Asn	Cys
225					230					235					240

Thr	Phe	Gly	Glu	Ile	Lys	Phe	Tyr	Ile	Gln	Leu	Ala	Lys	Lys		
				245					250						

&lt;210&gt; 346

&lt;211&gt; 587

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 346

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Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys
 1           5           10           15

Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr
          20           25           30

Glu Gly Leu Asn Ser Thr Glu Ala Ala Leu Ala Thr Phe Gly Thr Phe
          35           40           45

Pro Ser Thr Arg Pro Pro Gly Thr Pro Arg Ala Pro Gly Pro Ser Ser
          50           55           60

Gly Pro Arg Pro Thr Pro Val Thr Asp Val Ala Val Leu Cys Val Cys
65           70           75           80

Asp Leu Ser Pro Ala Gln Cys Asp Ile Asn Cys Cys Cys Asp Pro Asp
          85           90           95

Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val
          100          105          110

Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser
          115          120          125

Leu Asn Phe Thr Ala Asn Pro Pro Gln Arg Val Phe Glu Leu Val Asp
130          135          140

Gln Ile Asn Pro Ser Ile Phe Cys Ile His Ile Thr Asn Tyr Lys Pro
145          150          155          160

Ala Leu Ser Phe Ile Asn Pro Glu Val Pro Asp Glu Asn Asn Phe Asp
          165          170          175

Thr Leu Met Lys Thr Ser Asp Gly Phe Thr Leu Asn Ala Glu Ser Tyr
          180          185          190

Val Ser Phe Thr Thr Lys Leu Asp Ile Pro Thr Ala Ala Lys Tyr Glu
          195          200          205

Tyr Gly Val Pro Leu Gln Thr Ser Asp Ser Phe Leu Arg Phe Pro Ser
          210          215          220

Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn Asn Pro Ala Ala Phe Leu
225          230          235          240

Val Asn Gln Ala Val Lys Cys Thr Arg Lys Ile Asn Leu Glu Gln Cys
          245          250          255

Glu Glu Ile Glu Ala Leu Ser Met Ala Phe Tyr Ser Ser Pro Glu Ile
          260          265          270

Leu Arg Val Pro Asp Ser Arg Lys Lys Val Pro Ile Thr Val Gln Ser
          275          280          285

Ile Val Ile Gln Ser Leu Asn Lys Thr Leu Thr Arg Arg Glu Asp Thr
          290          295          300

Asp Val Leu Gln Pro Thr Leu Val Asn Ala Gly His Phe Ser Leu Cys
305          310          315          320

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Val Asn Val Val Leu Glu Val Lys Tyr Ser Leu Thr Tyr Thr Asp Ala  
 325 330 335  
 Gly Glu Val Thr Lys Ala Asp Leu Ser Phe Val Leu Gly Thr Val Ser  
 340 345 350  
 Ser Val Val Val Pro Leu Gln Gln Lys Phe Glu Ile His Phe Leu Gln  
 355 360 365  
 Glu Asn Thr Gln Pro Val Pro Leu Ser Gly Asn Pro Gly Tyr Val Val  
 370 375 380  
 Gly Leu Pro Leu Ala Ala Gly Phe Gln Pro His Lys Gly Ser Gly Ile  
 385 390 395 400  
 Ile Gln Thr Thr Asn Arg Tyr Gly Gln Leu Thr Ile Leu His Ser Thr  
 405 410 415  
 Thr Glu Gln Asp Cys Leu Ala Leu Glu Gly Val Arg Thr Pro Val Leu  
 420 425 430  
 Phe Gly Tyr Thr Met Gln Ser Gly Cys Lys Leu Arg Leu Thr Gly Ala  
 435 440 445  
 Leu Pro Cys Gln Leu Val Ala Gln Lys Val Lys Ser Leu Leu Trp Gly  
 450 455 460  
 Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser Gln Ala Gln  
 465 470 475 480  
 Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln Ser Phe Asn  
 485 490 495  
 Arg Lys Asp Ser Cys Gln Leu Pro Gly Ala Leu Val Ile Glu Val Lys  
 500 505 510  
 Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln Ala Lys Ile Val Asn  
 515 520 525  
 Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro Glu Ala Asn Ser Gly  
 530 535 540  
 Asn Glu Arg Thr Ile Leu Ile Ser Thr Ala Val Thr Phe Val Asp Val  
 545 550 555 560  
 Ser Ala Pro Ala Glu Ala Gly Phe Arg Ala Pro Pro Ala Ile Asn Ala  
 565 570 575  
 Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val  
 580 585

&lt;210&gt; 347

&lt;211&gt; 184

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 347

Met Lys Ala Leu Gly Ala Val Leu Leu Ala Leu Leu Leu Cys Gly Arg  
 1 5 10 15  
 Pro Gly Arg Gly Gln Thr Gln Gln Glu Glu Glu Glu Asp Glu Asp  
 20 25 30  
 His Gly Pro Asp Asp Tyr Asp Glu Glu Asp Glu Asp Glu Val Glu Glu  
 35 40 45  
 Glu Glu Thr Asn Arg Leu Pro Gly Gly Arg Ser Arg Val Leu Leu Arg  
 50 55 60  
 Cys Tyr Thr Cys Lys Ser Leu Pro Arg Asp Glu Arg Cys Asn Leu Thr  
 65 70 75 80  
 Gln Asn Cys Ser His Gly Gln Thr Cys Thr Thr Leu Ile Ala His Gly  
 85 90 95  
 Asn Thr Glu Ser Gly Leu Leu Thr Thr His Ser Thr Trp Cys Thr Asp  
 100 105 110  
 Ser Cys Gln Pro Ile Thr Lys Thr Val Glu Gly Thr Gln Val Thr Met  
 115 120 125  
 Thr Cys Cys Gln Ser Ser Leu Cys Asn Val Pro Pro Trp Gln Ser Ser  
 130 135 140  
 Arg Val Gln Asp Pro Thr Gly Lys Gly Ala Gly Gly Pro Arg Gly Ser  
 145 150 155 160  
 Ser Glu Thr Val Gly Ala Ala Leu Leu Leu Asn Leu Leu Ala Gly Leu  
 165 170 175  
 Gly Ala Met Gly Ala Arg Arg Pro  
 180

&lt;210&gt; 348

&lt;211&gt; 108

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (19)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (21)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (29)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE



&lt;222&gt; (87)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 348

Met	Phe	Ser	Leu	Ser	Trp	Gln	Leu	Ser	Leu	Val	Thr	Phe	Met	Gly	Phe
1				5					10					15	

Pro	Ile	Xaa	Met	Xaa	Val	Ser	Asn	Ile	Tyr	Gly	Lys	Xaa	Tyr	Lys	Arg
			20					25					30		

Leu	Ser	Lys	Glu	Val	Gln	Asn	Ala	Leu	Ala	Arg	Ala	Ser	Asn	Thr	Ala
		35					40						45		

Glu	Glu	Thr	Ile	Ser	Ala	Met	Lys	Thr	Val	Arg	Ser	Phe	Ala	Asn	Glu
	50					55					60				

Glu	Glu	Glu	Ala	Glu	Val	Tyr	Leu	Arg	Lys	Leu	Gln	Gln	Val	Tyr	Lys
65					70					75					80

Leu	Asn	Arg	Lys	Glu	Ala	Xaa	Ala	Tyr	Met	Tyr	Tyr	Val	Trp	Gly	Ser
				85					90					95	

Gly	Leu	Thr	Leu	Leu	Val	Val	Gln	Val	Ser	Ile	Leu
			100					105			

&lt;210&gt; 349

&lt;211&gt; 219

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 349

Val	Thr	Ile	Leu	Cys	Ile	Asp	Leu	Gly	Thr	Asp	Met	Val	Pro	Ala	Ile
1				5					10					15	

Ser	Leu	Ala	Tyr	Glu	Gln	Ala	Glu	Ser	Asp	Ile	Met	Lys	Arg	Gln	Pro
		20						25					30		

Arg	Asn	Pro	Lys	Thr	Asp	Lys	Leu	Val	Asn	Glu	Arg	Leu	Ile	Ser	Met
		35					40					45			

Ala	Tyr	Gly	Gln	Ile	Gly	Met	Ile	Gln	Ala	Leu	Gly	Gly	Phe	Phe	Thr
	50					55					60				

Tyr	Phe	Val	Ile	Leu	Ala	Glu	Asn	Gly	Phe	Leu	Pro	Ile	His	Leu	Leu
65					70					75					80

Gly	Leu	Arg	Val	Asp	Trp	Asp	Asp	Arg	Trp	Ile	Asn	Asp	Val	Glu	Asp
				85					90					95	

Ser	Tyr	Gly	Gln	Gln	Trp	Thr	Tyr	Glu	Gln	Arg	Lys	Ile	Val	Glu	Phe
			100					105					110		

Thr	Cys	His	Thr	Ala	Phe	Phe	Val	Ser	Ile	Val	Val	Val	Gln	Trp	Ala
		115					120						125		

Asp	Leu	Val	Ile	Cys	Lys	Thr	Arg	Arg	Asn	Ser	Val	Phe	Gln	Gln	Gly
	130						135				140				

Met Lys Asn Lys Ile Leu Ile Phe Gly Leu Phe Glu Glu Thr Ala Leu  
145 150 155 160

Ala Ala Phe Leu Ser Tyr Cys Pro Gly Met Gly Val Ala Leu Arg Met  
165 170 175

Tyr Pro Leu Lys Pro Thr Trp Trp Phe Cys Ala Phe Pro Tyr Ser Leu  
180 185 190

Leu Ile Phe Val Tyr Asp Glu Val Arg Lys Leu Ile Ile Arg Arg Arg  
195 200 205

Pro Gly Gly Trp Val Glu Lys Glu Thr Tyr Tyr  
210 215

<210> 350

<211> 73

<212> PRT

<213> Homo sapiens

<400> 350

Phe Ser Ser Ser Met Ser Leu Ser Phe Leu Pro Phe Leu Pro Phe Leu  
1 5 10 15

Ser Pro Cys Ser Glu Thr Ala Ala Gly Ser Tyr Leu Ser Arg Pro Thr  
20 25 30

Pro Phe Pro Met Val Ala Val Leu Ser Ala Gly Ala Gly Ser Cys Arg  
35 40 45

Trp Arg Ile Arg Glu Lys Ser Thr Glu Gln Leu Pro Ala Glu Arg Ala  
50 55 60

Gly Pro Gly Glu Pro Ser Gly Gly Ser  
65 70

<210> 351

<211> 296

<212> PRT

<213> Homo sapiens

<400> 351

Met Phe Ser Leu Ser Trp Gln Leu Ser Leu Val Thr Phe Met Gly Phe  
1 5 10 15

Pro Ile Ile Met Met Val Ser Asn Ile Tyr Gly Lys Tyr Tyr Lys Arg  
20 25 30

Leu Ser Lys Glu Val Gln Asn Ala Leu Ala Arg Ala Ser Asn Thr Ala  
35 40 45

Glu Glu Thr Ile Ser Ala Met Lys Thr Val Arg Ser Phe Ala Asn Glu  
50 55 60

Glu Glu Glu Ala Glu Val Tyr Leu Arg Lys Leu Gln Gln Val Tyr Lys  
65 70 75 80

Leu Asn Arg Lys Glu Ala Ala Ala Tyr Met Tyr Tyr Val Trp Gly Ser  
                     85                    90                    95  
 Gly Leu Thr Leu Leu Val Val Gln Val Ser Ile Leu Tyr Tyr Gly Gly  
                     100                    105                    110  
 His Leu Val Ile Ser Gly Gln Met Thr Ser Gly Asn Leu Ile Ala Phe  
                     115                    120                    125  
 Ile Ile Tyr Glu Phe Val Leu Gly Asp Cys Met Glu Asn Val Ser Phe  
                     130                    135                    140  
 Ser Leu Ser Pro Gly Lys Val Thr Ala Leu Val Gly Pro Ser Gly Ser  
                     145                    150                    155                    160  
 Gly Lys Ser Ser Cys Val Asn Ile Leu Glu Asn Phe Tyr Pro Leu Glu  
                     165                    170                    175  
 Gly Gly Arg Val Leu Leu Asp Gly Lys Pro Ile Ser Ala Tyr Asp His  
                     180                    185                    190  
 Lys Tyr Leu His Arg Val Ile Ser Leu Val Ser Gln Glu Pro Val Leu  
                     195                    200                    205  
 Phe Ala Arg Ser Ile Thr Asp Asn Ile Ser Tyr Gly Leu Pro Thr Val  
                     210                    215                    220  
 Pro Phe Glu Met Val Val Glu Ala Ala Gln Lys Ala Asn Ala His Gly  
                     225                    230                    235                    240  
 Phe Ile Met Glu Leu Gln Asp Gly Tyr Ser Thr Glu Thr Gly Glu Lys  
                     245                    250                    255  
 Gly Ala Gln Leu Ser Gly Gly Gln Lys Gln Arg Val Ala Trp Pro Gly  
                     260                    265                    270  
 Leu Trp Cys Gly Thr Pro Gln Ser Ser Ser Trp Met Lys Pro Pro Ala  
                     275                    280                    285  
 Leu Trp Met Pro Arg Ala Ser Ile  
                     290                    295

&lt;210&gt; 352

&lt;211&gt; 446

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 352

Met Phe Ser Leu Ser Trp Gln Leu Ser Leu Val Thr Phe Met Gly Phe  
           1                    5                    10                    15  
 Pro Ile Ile Met Met Val Ser Asn Ile Tyr Gly Lys Tyr Tyr Lys Arg  
                     20                    25                    30  
 Leu Ser Lys Glu Val Gln Asn Ala Leu Ala Arg Ala Ser Asn Thr Ala  
                     35                    40                    45

Glu Glu Thr Ile Ser Ala Met Lys Thr Val Arg Ser Phe Ala Asn Glu  
 50 55 60  
 Glu Glu Glu Ala Glu Val Tyr Leu Arg Lys Leu Gln Gln Val Tyr Lys  
 65 70 75 80  
 Leu Asn Arg Lys Glu Ala Ala Ala Tyr Met Tyr Tyr Val Trp Gly Ser  
 85 90 95  
 Gly Leu Thr Leu Leu Val Val Gln Val Ser Ile Leu Tyr Tyr Gly Gly  
 100 105 110  
 His Leu Val Ile Ser Gly Gln Met Thr Ser Gly Asn Leu Ile Ala Phe  
 115 120 125  
 Ile Ile Tyr Glu Phe Val Leu Gly Asp Cys Met Glu Ser Val Gly Ser  
 130 135 140  
 Val Tyr Ser Gly Leu Met Gln Gly Val Gly Ala Ala Glu Lys Val Phe  
 145 150 155 160  
 Glu Phe Ile Asp Arg Gln Pro Thr Met Val His Asp Gly Ser Leu Ala  
 165 170 175  
 Pro Asp His Leu Glu Gly Arg Val Asp Phe Glu Asn Val Thr Phe Thr  
 180 185 190  
 Tyr Arg Thr Arg Pro His Thr Gln Val Leu Gln Asn Val Ser Phe Ser  
 195 200 205  
 Leu Ser Pro Gly Lys Val Thr Ala Leu Val Gly Pro Ser Gly Ser Gly  
 210 215 220  
 Lys Ser Ser Cys Val Asn Ile Leu Glu Asn Phe Tyr Pro Leu Glu Gly  
 225 230 235 240  
 Gly Arg Val Leu Leu Asp Gly Lys Pro Ile Ser Ala Tyr Asp His Lys  
 245 250 255  
 Tyr Leu His Arg Val Ile Ser Leu Val Ser Gln Glu Pro Val Leu Phe  
 260 265 270  
 Ala Arg Ser Ile Thr Asp Asn Ile Ser Tyr Gly Leu Pro Thr Val Pro  
 275 280 285  
 Phe Glu Met Val Val Glu Ala Ala Gln Lys Ala Asn Ala His Gly Phe  
 290 295 300  
 Ile Met Glu Leu Gln Asp Gly Tyr Ser Thr Glu Thr Gly Glu Lys Gly  
 305 310 315 320  
 Ala Gln Leu Ser Gly Gly Gln Lys Gln Arg Val Ala Met Ala Arg Ala  
 325 330 335  
 Leu Val Arg Asn Pro Pro Val Leu Ile Leu Asp Glu Ala Thr Ser Ala  
 340 345 350  
 Leu Asp Ala Glu Ser Glu Tyr Leu Ile Gln Gln Ala Ile His Gly Asn  
 355 360 365

Leu Gln Lys His Thr Val Leu Ile Ile Ala His Arg Leu Ser Thr Val  
 370 375 380

Glu His Ala His Leu Ile Val Val Leu Asp Lys Gly Arg Val Val Gln  
 385 390 395 400

Gln Gly Thr His Gln Gln Leu Leu Ala Gln Gly Gly Leu Tyr Ala Lys  
 405 410 415

Leu Val Gln Arg Gln Met Leu Gly Leu Gln Pro Ala Ala Asp Phe Thr  
 420 425 430

Ala Gly His Asn Glu Pro Val Ala Asn Gly Ser His Lys Ala  
 435 440 445

<210> 353

<211> 35

<212> PRT

<213> Homo sapiens

<400> 353

Lys Phe Lys Gln Val Ile Lys Ser Phe Tyr Lys Ile His Leu Ala Lys  
 1 5 10 15

Glu Ile Leu Ser Met Asn Ile Lys Leu Arg Lys Val Leu Tyr Val Phe  
 20 25 30

Leu Val Asn  
 35

<210> 354

<211> 27

<212> PRT

<213> Homo sapiens

<400> 354

Met Ala Ile Phe Cys Phe Ser Leu Cys Ser Leu Gly Ser Ile Leu Gly  
 1 5 10 15

Lys Gly Met Ser Thr Phe Gly Ser Ile Ser Val  
 20 25

<210> 355

<211> 99

<212> PRT

<213> Homo sapiens

<400> 355

Met Gly Arg Val Ser Ile Gln Gln Leu Gly Val Leu Val Ala Leu Pro  
 1 5 10 15

Val Pro Leu Leu Leu Gly Cys Gly Ser Ala Leu His Pro Gly Ala  
 20 25 30

Pro Arg Ser Ile Pro His Thr Met Pro Ser Thr Arg Glu Val Gly Gln  
                   35                  40                  45

Thr Arg Pro Gly Pro Cys Gln Pro Ser Val Pro Arg Phe Ser His Trp  
           50                  55                  60

Leu His Arg Met Val Ala Phe Ser Leu Pro Thr Ser Gln Ser Cys Ser  
   65                  70                  75                  80

Glu Gly Ala Trp Arg Ser Thr Leu Ser His Gln Gly Gln Leu Glu Thr  
                   85                  90                  95

Lys Ala Ile

<210> 356  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<400> 356  
 Met Gly Arg Val Ser Ile Gln Gln Leu Gly Val Leu Val Ala Leu Pro  
   1                  5                  10                  15

Val Pro Leu Leu Leu Leu Gly Cys Gly Ser Ala Leu His Pro Gly Ala  
           20                  25                  30

Pro Arg Ser Ile Pro His Thr Met Pro Ser Thr Arg Glu Val Gly Gln  
                   35                  40                  45

Thr Arg Pro Gly Pro Cys Gln Pro Ser Val Pro Arg Phe Ser His Trp  
           50                  55                  60

Leu His Arg Met Val Ala Phe Ser Leu Pro Thr Ser Gln Ser Cys Ser  
   65                  70                  75                  80

Glu Gly Ala Trp Arg Ser Thr Leu Ser His Gln Gly Gln Leu Glu Thr  
                   85                  90                  95

Lys Ala Ile

<210> 357  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (75)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 357  
 Met Gly Arg Val Ser Ile Gln Gln Leu Gly Val Leu Val Ala Leu Pro  
   1                  5                  10                  15

Val Pro Leu Leu Leu Leu Gly Cys Gly Ser Ala Leu His Pro Gly Ala  
                   20                                  25                                  30

Pro Arg Ser Ile Pro His Thr Met Pro Ser Thr Arg Glu Val Gly Gln  
                   35                                  40                                  45

Thr Arg Pro Gly Pro Cys Gln Pro Ser Val Pro Arg Phe Ser His Trp  
                   50                                  55                                  60

Leu His Arg Met Val Ala Phe Ser Leu Pro Xaa Ser Gln Ser Cys Ser  
                   65                                  70                                  75                                  80

Glu Gly Ala Trp Arg Ser Thr Leu Ser His Gln Gly Gln Leu Glu Thr  
                                   85                                  90                                  95

Lys Ala Ile

<210> 358  
 <211> 67  
 <212> PRT  
 <213> Homo sapiens

<400> 358  
 Pro Ile Pro Trp Leu Cys Pro Pro Ser Pro Thr Leu Pro Leu Leu Ser  
           1                                  5                                  10                                  15

Ile Phe Phe Leu Pro Thr His Pro Pro Pro Pro Ser Arg Arg Gly Gly  
                   20                                  25                                  30

Leu Gly Arg Pro Arg Pro Ser Leu Glu Lys Pro Ser Leu Ser Ser Ala  
                   35                                  40                                  45

Val Val Pro Pro Pro Asn Pro Ile Thr Ala Ala His Pro Ile Leu Thr  
           50                                  55                                  60

Val Ile Leu  
           65

<210> 359  
 <211> 4  
 <212> PRT  
 <213> Homo sapiens

<400> 359  
 Ala Pro Arg Gly  
           1

<210> 360  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<400> 360

Met Gln Asn Arg Ser Pro Ala Phe Cys Phe Leu Leu Met Tyr Leu Leu  
 1 5 10 15  
 Cys Thr Cys Val Thr Arg Val Leu Leu Ser Ile Ile Phe Asn Leu Ile  
 20 25 30  
 Arg Ala Tyr Leu Trp Ser Trp His Asp Val Thr Pro Cys Val Arg Val  
 35 40 45  
 Gly Ile Thr Pro Val Tyr Leu Phe Leu Ser Ser Ala Ala His Asn Ala  
 50 55 60  
 Arg His Ile Val Gly Thr Leu  
 65 70

<210> 361  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<400> 361  
 Met Gln Asn Arg Ser Pro Ala Phe Cys Phe Leu Leu Met Tyr Leu Leu  
 1 5 10 15  
 Cys Thr Cys Val Thr Arg Val Leu Leu Ser Ile Ile Phe Asn Leu Ile  
 20 25 30  
 Arg Ala Tyr Leu Trp Ser Trp His Asp Val Thr Pro Cys Val Arg Val  
 35 40 45  
 Gly Ile Thr Pro Val Tyr Leu Phe Leu Ser Ser Ala Ala His Asn Ala  
 50 55 60  
 Arg His Ile Val Gly Thr Leu  
 65 70

<210> 362  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 362  
 Met Leu Gln Asp Leu Cys Leu Cys Leu Phe Ser Ser Phe Phe Leu Ser  
 1 5 10 15  
 Leu Phe Val Cys Leu Lys Val Gly Gln Lys Ile Leu Leu Leu Thr Asp  
 20 25 30  
 Phe Pro Trp Ser Ala Ala Val Lys Arg Ser Leu Ser Leu Leu Ser Phe  
 35 40 45  
 Leu Met Glu  
 50



<210> 363  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 363  
 Met Leu Gln Asp Leu Cys Leu Cys Leu Phe Ser Ser Phe Phe Leu Ser  
   1                  5                  10                  15  
 Leu Phe Val Cys Leu Lys Val Gly Gln Lys Ile Leu Leu Leu Thr Asp  
                   20                  25                  30  
 Phe Pro Trp Ser Ala Ala Val Lys Arg Ser Leu Ser Leu Leu Ser Phe  
           35                  40                  45  
 Leu Met Glu  
       50

<210> 364  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (41)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 364  
 Ser Cys Phe Leu Ala Leu Lys Ser Ile Leu Ala Val Cys Gly Gly Ser  
   1                  5                  10                  15  
 His Leu Pro Pro Ala Leu Trp Glu Ala Ser Gly Gly Gly Leu Val Pro  
                   20                  25                  30  
 Asn Ser Cys Ser Pro Gly Asp Pro Xaa Val Leu Glu Arg Pro Pro Pro  
           35                  40                  45  
 Arg Trp Ser Ser Ser  
       50

<210> 365  
 <211> 110  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (97)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 365  
 Met Asp Asn Arg Phe Ala Thr Ala Phe Val Ile Ala Cys Val Leu Ser  
   1                  5                  10                  15  
 Leu Ile Ser Thr Ile Tyr Met Ala Ala Ser Ile Gly Thr Asp Phe Trp

	20		25		30										
Tyr	Glu	Tyr	Arg	Ser	Pro	Val	Gln	Glu	Asn	Ser	Ser	Asp	Leu	Asn	Lys
	35						40					45			
Ser	Ile	Trp	Asp	Glu	Phe	Ile	Ser	Asp	Glu	Ala	Asp	Glu	Lys	Thr	Tyr
	50					55					60				
Asn	Asp	Ala	Leu	Phe	Arg	Tyr	Asn	Gly	Thr	Val	Gly	Leu	Trp	Arg	Arg
65					70					75				80	
Cys	Ile	Thr	Ile	Pro	Lys	Asn	Met	His	Trp	Tyr	Ser	Pro	Pro	Glu	Arg
				85					90					95	
Xaa	Glu	Ser	Phe	Asp	Val	Val	Thr	Lys	Cys	Val	Ser	Ser	His		
	100							105					110		

&lt;210&gt; 366

&lt;211&gt; 165

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (2)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (4)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (5)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (148)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 366

Arg	Xaa	Thr	Xaa	Xaa	His	Phe	Ala	Arg	Thr	Tyr	Pro	Gly	Ile	His	Leu
1				5					10					15	

Arg	Ile	Gly	Ser	Asp	Trp	Lys	Asn	Ala	Cys	Ala	Met	Leu	Lys	Asp	Gly
	20						25						30		

Thr	Ala	Gly	Ser	His	Phe	Met	Ala	Ser	Pro	Gln	Cys	Val	Gly	Tyr	Ser
	35					40						45			

Arg	Ser	Thr	Ala	Ala	Pro	Leu	Thr	Met	Thr	Met	Cys	Leu	Pro	Asp	Leu
	50					55					60				

Lys	Glu	Ile	Gln	Arg	Ala	Val	Lys	Leu	Trp	Val	Arg	Ser	Leu	Asp	Ala
65					70					75				80	

Gln Ser Val Tyr Val Ala Thr Asp Ser Glu Ser Tyr Val Pro Glu Leu  
                     85                    90                    95

Gln Gln Leu Phe Lys Gly Lys Val Lys Val Val Ser Leu Lys Pro Glu  
                     100                    105                    110

Val Ala Gln Val Asp Leu Tyr Ile Leu Gly Gln Ala Asp His Phe Ile  
                     115                    120                    125

Gly Asn Cys Val Ser Ser Phe Thr Ala Phe Val Lys Arg Glu Arg Asp  
                     130                    135                    140

Leu Gln Gly Xaa Pro Ser Ser Phe Phe Gly Met Asp Arg Pro Pro Lys  
                     145                    150                    155                    160

Leu Arg Asp Glu Phe  
                     165

&lt;210&gt; 367

&lt;211&gt; 177

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 367

Leu Val Leu Trp Thr Arg Phe Tyr Arg Gly Asp Met Ser Leu His Ser  
   1                    5                    10                    15

Ser Pro Thr Leu Pro Thr Ser Leu Tyr Gln Ser Cys Asp Leu Ser Val  
                     20                    25                    30

Gly Gly Pro Ser Leu Leu Thr Trp Val Trp Arg Arg Glu Arg Arg Cys  
                     35                    40                    45

Cys Lys Val Phe Ser Val Ser His Cys Leu Glu Ala Gly Pro Ala Lys  
                     50                    55                    60

Ala Trp Ala His Ser Cys Thr Gly Ser Pro Arg Gly Arg Thr Gly Trp  
                     65                    70                    75                    80

Gly Ser Arg Ala Cys Glu Ala Leu Gly Lys Gly Met Gly Leu Trp Gly  
                     85                    90                    95

Arg Gly Gly Met Gly Phe Arg Ser Ile Cys Thr Ile Arg Lys Val Leu  
                     100                    105                    110

Arg Ser Phe Phe Leu Glu Gly Thr Leu Ser Ser Leu Ser Leu Phe Leu  
                     115                    120                    125

Asp Leu Gly Leu Glu Leu Arg Met Gly Arg Cys Ala Gln Gly Gly Thr  
                     130                    135                    140

His Gln Ser Thr Arg Glu Gly Gly Tyr Leu Gly Val Ser Gln Gly Leu  
                     145                    150                    155                    160

Cys Gln Cys Leu Gln Pro Thr Ser Arg Ser Leu Glu Phe Gly Glu Trp  
                     165                    170                    175

Gly

<210> 368  
 <211> 184  
 <212> PRT  
 <213> Homo sapiens

<400> 368

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Met Asp Asn Arg Phe Ala Thr Ala Phe Val Ile Ala Cys Val Leu Ser
 1           5           10           15

Leu Ile Ser Thr Ile Tyr Met Ala Ala Ser Ile Gly Thr Asp Phe Trp
      20           25           30

Tyr Glu Tyr Arg Ser Pro Val Gln Glu Asn Ser Ser Asp Leu Asn Lys
      35           40           45

Ser Ile Trp Asp Glu Phe Ile Ser Asp Glu Ala Asp Glu Lys Thr Tyr
      50           55           60

Asn Asp Ala Leu Phe Arg Tyr Asn Gly Thr Val Gly Leu Trp Arg Arg
      65           70           75           80

Cys Ile Thr Ile Pro Lys Asn Met His Trp Tyr Ser Pro Pro Glu Arg
      85           90           95

Thr Glu Ser Phe Asp Val Val Thr Lys Cys Val Ser Phe Thr Leu Thr
      100          105          110

Glu Gln Phe Met Glu Lys Phe Val Asp Pro Gly Asn His Asn Ser Gly
      115          120          125

Ile Asp Leu Leu Arg Thr Tyr Leu Trp Arg Cys Gln Phe Leu Leu Pro
      130          135          140

Phe Val Ser Leu Gly Leu Met Cys Phe Gly Ala Leu Ile Gly Leu Cys
      145          150          155          160

Ala Cys Ile Cys Arg Ser Leu Tyr Pro Thr Ile Ala Thr Gly Ile Leu
      165          170          175

His Leu Leu Ala Asp Thr Met Leu
      180

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<210> 369  
 <211> 211  
 <212> PRT  
 <213> Homo sapiens

<220>

<221> SITE

<222> (64)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

&lt;222&gt; (113)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 369

Ser Thr His Ala Ser Gly Arg Thr Cys Ala Leu Pro Ala Ala Ala Thr  
 1 5 10 15

Pro Arg Arg Val Gly Ala Ala Ala Pro Gly Cys Ala Gln Gly Arg Ala  
 20 25 30

Thr Asp Gly Ala Arg Arg Ala Glu Leu Arg Arg Glu Pro Ala Val Val  
 35 40 45

Ala His Arg His Gly His Ala Gly Ala His Gln Gly Gly Ala Gln Xaa  
 50 55 60

Ala Ala Gln Pro His Arg Arg Leu Gln Val Pro Gln Ala Gln Ala Gly  
 65 70 75 80

Ala His Leu Ala Pro Gly Arg Glu Ser Glu Asp Pro Gln Glu Ser Glu  
 85 90 95

His Gly Ala Gly Val His Gly Glu Pro Ala Ala Arg Ala Gly Gly Ala  
 100 105 110

Xaa Gln Ala Glu Ser Pro Gln Pro Arg Gln Gln Arg Leu Pro Ala Ala  
 115 120 125

Ala Pro Ala Pro Gly Ala Arg Val Leu Ser Pro Arg Ala Gly Arg Met  
 130 135 140

Arg Gly His Pro Pro Gln Gly Ala Gly Ser Arg Gly Gly Val Val Gly  
 145 150 155 160

Ala Pro Asp Leu Glu Arg Val Arg Pro Trp Gly Pro Pro Leu Pro Glu  
 165 170 175

Cys Ala Gln Glu Leu Arg Glu Gly Ala Ala Pro Gly Asp Ser Pro Pro  
 180 185 190

Pro Arg Val Pro Arg Thr Arg Gln Ala Gly Pro Pro Ala Pro Gly Gly  
 195 200 205

Ala Ser Ala  
 210

&lt;210&gt; 370

&lt;211&gt; 225

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (11)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (112)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (166)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 370

Arg Pro Asp Leu Glu Arg Val Arg Pro Trp Xaa Pro Pro Leu Pro Glu  
 1 5 10 15

Cys Ala Gln Glu Leu Arg Glu Gly Ala Ala Pro Gly Ile Pro Pro Arg  
 20 25 30

Gly Cys Pro Gly Leu Gly Arg Gly Ala Pro Asp Ser Thr Ser Trp Thr  
 35 40 45

Pro Cys Ser Arg Gly Gly Glu Arg Met Thr Pro Pro Pro Ser Arg Cys  
 50 55 60

Leu Phe Pro Pro Arg Gly Arg Pro Val Leu His Lys Pro Ala Arg Leu  
 65 70 75 80

Gly Cys Pro Phe Val His Arg Ala Gly Lys Gly Ala Pro Arg Gly Arg  
 85 90 95

Ser Ser Lys Pro Cys Leu Ser Phe Thr Phe Thr Phe Phe Phe Phe Xaa  
 100 105 110

Phe Gly Arg Glu Lys Asn Arg Val Phe Asp Ser Ala Leu Phe Met Phe  
 115 120 125

Leu Leu Gly Asn Lys Arg Trp Leu Cys Val Cys Val Phe Ser Cys Val  
 130 135 140

Gly Phe Leu Lys Lys Trp Glu Glu Glu Lys Lys Ile Leu Arg Pro Phe  
 145 150 155 160

Pro Arg Ser Arg Ser Xaa Leu Arg Phe Phe Arg Pro Val Pro Pro Pro  
 165 170 175

Phe Phe Val Leu Phe Cys Phe Val Leu Leu Arg Val His Ile Pro Val  
 180 185 190

Cys Asn Pro Trp Phe Ala Arg Phe Ser Val Phe Ser Lys Val Ser Leu  
 195 200 205

Arg Gln Lys Pro Arg Ala Glu Phe Leu Gly Leu Glu Gly Gln Asn Phe  
 210 215 220

Pro

225

&lt;210&gt; 371

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 371

Met Ile Pro Phe Phe Leu Val Trp Val Ser Phe Leu His Ser Phe Ser  
 1 5 10 15

Val Ala Cys Ile Leu Gly His His Glu Cys Phe Ala Phe Ser Leu Ala  
 20 25 30

Asp Asp Thr Ile Gly Thr Ala Trp His Gly Gly Lys Val Ser His Lys  
 35 40 45

Leu Thr Tyr Lys His Cys Gly Ser Arg Ala His Asp Tyr Leu Glu Gly  
 50 55 60

Glu Ser Leu Leu  
 65

&lt;210&gt; 372

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 372

Val Ile Pro Phe Tyr Ile His Tyr Phe Val Tyr Phe Asn Cys Phe Ile  
 1 5 10 15

Leu Val Thr Leu Pro Phe Lys Ile Phe Lys Leu Pro Ile Val Arg Cys  
 20 25 30

Gln Trp Glu Trp Thr Pro Asp Gly Gln Ile Tyr Lys Trp Gln Trp Leu  
 35 40 45

Asp Gln Thr Arg Thr Leu Glu Asp Gly Arg Val Gly Ala Lys  
 50 55 60

&lt;210&gt; 373

&lt;211&gt; 29

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (11)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (13)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 373

Ile Pro Leu Trp Phe Ile Ser Val Ser Phe Xaa Met Xaa Arg Phe Thr  
 1 5 10 15

Ile Leu Asn Gln Tyr His Val Thr Cys Arg Cys Gln Asn  
 20 25

<210> 374  
 <211> 68  
 <212> PRT  
 <213> Homo sapiens

<400> 374  
 Met Ile Pro Phe Phe Leu Val Trp Val Ser Phe Leu His Ser Phe Ser  
           1                  5                  10                  15  
 Val Ala Cys Ile Leu Gly His His Glu Cys Phe Ala Phe Ser Leu Ala  
                   20                  25                  30  
 Asp Asp Thr Ile Gly Thr Ala Trp His Gly Gly Lys Val Ser His Lys  
           35                  40                  45  
 Leu Thr Tyr Lys His Cys Gly Ser Arg Ala His Asp Tyr Leu Glu Gly  
           50                  55                  60  
 Glu Ser Leu Leu  
           65

<210> 375  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (42)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (44)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 375  
 Leu Leu Ser Ala Met Leu Pro Gly Glu Asn Glu Ile Val Ala Trp Ile  
           1                  5                  10                  15  
 Asn Glu Ser Val Cys Val Ala Arg Ser Gly Leu Ala Leu Asp Val Asp  
                   20                  25                  30  
 Gly Ala Pro Ala Leu Ser Pro Gln Leu Xaa Ser Xaa Lys Ile Ser Asn  
           35                  40                  45  
 Leu Glu Glu Asn Gly Arg Thr Val Glu  
           50                  55

<210> 376  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens



&lt;400&gt; 376

Met Ala Leu Val Val Glu Ala Val Ile Ile Ile Phe Ile Glu Cys Gln  
1 5 10 15

Ala Leu Cys Ile Ile Leu Ser Ser Ser His Ile Asn Arg Arg Arg Gln  
20 25 30

Val Val Ile Ala Pro Phe Gly Glu Ser Glu Asn  
35 40

&lt;210&gt; 377

&lt;211&gt; 24

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 377

Ser Ala Cys Phe Cys Cys Ala Ala Ser Ser Leu Phe Ser Ser Phe Ser  
1 5 10 15

Ile Val Ser Pro Leu Trp Lys Lys  
20

&lt;210&gt; 378

&lt;211&gt; 477

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (49)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (57)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (105)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (109)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (152)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (194)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (197)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (198)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (203)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (459)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (463)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (468)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 378

Met	Val	Asn	Ala	Cys	Trp	Cys	Gly	Leu	Leu	Ala	Ala	Leu	Ser	Leu	Leu
1				5					10					15	

Leu	Asp	Ala	Ser	Thr	Asp	Glu	Ala	Ala	Thr	Glu	Asn	Ile	Leu	Lys	Ala
			20					25						30	

Glu	Leu	Thr	Met	Ala	Ala	Leu	Cys	Gly	Lys	Leu	Gly	Leu	Val	Thr	Ser
		35					40					45			

Xaa	Asn	Ala	Phe	Ile	Thr	Ala	Ile	Xaa	Lys	Gly	Ser	Leu	Pro	Pro	His
	50					55					60				

Tyr	Ala	Leu	Thr	Val	Leu	Asn	Thr	Thr	Thr	Ala	Ala	Thr	Leu	Ser	Asn
65					70					75					80

Lys	Ser	Tyr	Ser	Val	Gln	Gly	Gln	Ser	Val	Met	Met	Ile	Ser	Pro	Ser
				85					90					95	

Ser	Glu	Ser	His	Gln	Gln	Val	Val	Xaa	Val	Gly	Gln	Xaa	Leu	Ala	Val
			100					105					110		

Gln	Pro	Gln	Gly	Thr	Val	Met	Leu	Thr	Ser	Lys	Asn	Ile	Gln	Cys	Met
		115					120						125		

Arg	Thr	Leu	Leu	Asn	Leu	Ala	His	Cys	His	Gly	Ala	Val	Leu	Gly	Thr
	130					135					140				

Ser Trp Gln Leu Val Leu Ala Xaa Leu Gln His Leu Val Trp Ile Leu  
 145 150 155 160  
 Gly Leu Lys Pro Ser Ser Gly Gly Ala Leu Lys Pro Gly Arg Ala Val  
 165 170 175  
 Glu Gly Pro Ser Thr Val Leu Thr Thr Ala Val Met Thr Asp Leu Pro  
 180 185 190  
 Val Xaa Ser Asn Xaa Xaa Ser Arg Leu Phe Xaa Ser Ser Gln Tyr Leu  
 195 200 205  
 Asp Asp Val Ser Leu His His Leu Ile Asn Ala Leu Cys Ser Leu Ser  
 210 215 220  
 Leu Glu Ala Met Asp Met Ala Tyr Gly Asn Asn Lys Glu Pro Ser Leu  
 225 230 235 240  
 Phe Ala Val Ala Lys Leu Leu Glu Thr Gly Leu Val Asn Met His Arg  
 245 250 255  
 Ile Glu Ile Leu Trp Arg Pro Leu Thr Gly His Leu Leu Glu Val Cys  
 260 265 270  
 Gln His Pro Asn Ser Arg Met Arg Glu Trp Gly Ala Glu Ala Leu Thr  
 275 280 285  
 Ser Leu Ile Lys Ala Gly Leu Thr Phe Asn His Asp Pro Pro Leu Ser  
 290 295 300  
 Gln Asn Gln Arg Leu Gln Leu Leu Leu Leu Asn Pro Leu Lys Glu Met  
 305 310 315 320  
 Ser Asn Ile Asn His Pro Asp Ile Arg Leu Lys Gln Leu Glu Cys Val  
 325 330 335  
 Leu Gln Ile Leu Gln Ser Gln Gly Asp Ser Leu Gly Pro Gly Trp Pro  
 340 345 350  
 Leu Val Leu Gly Val Met Gly Ala Ile Arg Asn Asp Gln Gly Glu Ser  
 355 360 365  
 Leu Ile Arg Thr Ala Phe Gln Cys Leu Gln Leu Val Val Thr Asp Phe  
 370 375 380  
 Leu Pro Thr Met Pro Cys Thr Cys Leu Gln Ile Val Val Asp Val Ala  
 385 390 395 400  
 Gly Ser Phe Gly Leu His Asn Gln Glu Leu Asn Ile Ser Leu Thr Ser  
 405 410 415  
 Ile Gly Leu Leu Trp Asn Ile Ser Asp Tyr Phe Phe Gln Arg Gly Glu  
 420 425 430  
 Thr Ile Glu Lys Glu Leu Asn Lys Glu Glu Ala Ala Gln Gln Lys Gln  
 435 440 445  
 Ala Glu Glu Lys Gly Val Gly Leu Asn Arg Xaa Phe His Pro Xaa Pro  
 450 455 460

Ala Phe Asp Xaa Trp Gly Tyr Ala Leu Cys Lys Ile Gly  
 465 470 475

<210> 379  
 <211> 29  
 <212> PRT  
 <213> Homo sapiens

<400> 379  
 Asn Ser Gln Tyr Phe Thr Thr Asn Ile Ala Leu Met Phe Leu Phe Lys  
 1 5 10 15

Lys Lys Lys Val Tyr Gly Cys Leu His Leu Ser Thr Val  
 20 25

<210> 380  
 <211> 70  
 <212> PRT  
 <213> Homo sapiens

<400> 380  
 Met His Leu Asn Val Gln Tyr Cys Thr Ile His Leu Ile Leu Leu Leu  
 1 5 10 15

Leu Phe Ile Thr Arg His Tyr Ala Tyr Gln Trp Thr Phe Gln Val Gly  
 20 25 30

Gly Leu Thr Val Ala Ser Ser Val Val Trp Gln His Pro Ser Ala Val  
 35 40 45

Ser Ile Tyr Thr Leu Leu Tyr Ile Tyr Ala Pro His Gln Gly Ser Thr  
 50 55 60

Gly Thr Arg Arg His Cys  
 65 70

<210> 381  
 <211> 67  
 <212> PRT  
 <213> Homo sapiens

<400> 381  
 Leu Gln Glu Phe Gly Thr Ser Gly Thr Ser Ala Asn Thr Thr Ala Val  
 1 5 10 15

Ala Leu Asn Ala Pro Ala His Pro Ala Arg Leu Leu Pro Pro Gly Pro  
 20 25 30

Ala Val Ala Leu Leu Leu Leu Arg Gly Ser Cys Ser Leu Cys Cys Cys  
 35 40 45

His Gln Pro His Lys Ala Ser Cys Lys Ala Met Pro Ser Ala Gly Ser  
 50 55 60

Asn Val Pro  
65

<210> 382  
<211> 79  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (23)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (45)  
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 382  
Met Gly Cys Cys Ser Lys Lys Tyr Trp Gln Leu Leu Leu Gly Ala Ala  
1 5 10 15  
Pro Trp Gly Val Ile Pro Xaa Leu Leu Leu Trp Met Gly Thr Arg Ala  
20 25 30  
Pro His Phe Lys Asp Ser Val Ser Gln Gly Leu Pro Xaa Lys Ala Glu  
35 40 45  
Glu Ser Arg Ala Asn Phe Asn Gln Phe Leu Val Leu Leu Met Pro Lys  
50 55 60  
Glu Met Ile Val Leu Thr Ile Val His Pro Ile Val Arg Arg Ala  
65 70 75

<210> 383  
<211> 39  
<212> PRT  
<213> Homo sapiens

<400> 383  
Met Phe Leu Val Ser Pro Ser Val Ser Ser Val Val Ser Ser Leu Leu  
1 5 10 15  
Ser Ile Phe Trp Leu Met His Leu Gly Gln Val Trp Leu Gly Ser Met  
20 25 30  
Glu Thr His Pro Ile Thr Ser  
35

<210> 384  
<211> 39  
<212> PRT  
<213> Homo sapiens

&lt;400&gt; 384

Met Phe Leu Val Ser Pro Ser Val Ser Ser Val Val Ser Ser Leu Leu  
1 5 10 15

Ser Ile Phe Trp Leu Met His Leu Gly Gln Val Trp Leu Gly Ser Met  
20 25 30

Glu Thr His Pro Ile Thr Ser  
35

&lt;210&gt; 385

&lt;211&gt; 39

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 385

Met Phe Leu Val Ser Pro Ser Val Ser Ser Val Val Ser Ser Leu Leu  
1 5 10 15

Ser Ile Phe Trp Leu Met His Leu Gly Gln Val Trp Leu Gly Ser Met  
20 25 30

Glu Thr His Pro Ile Thr Ser  
35

&lt;210&gt; 386

&lt;211&gt; 198

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (9)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (12)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (97)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (164)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (196)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 386

Pro Asp Pro Asn Ala Arg Arg Gly Xaa Asn Ala Xaa Ser Thr Arg Thr  
 1 5 10 15  
 Asp His Glu His Arg Thr Tyr Arg Leu Tyr Arg Arg Pro Ser Arg Phe  
 20 25 30  
 Arg Asp Ser Pro Ala Gln Arg Pro Tyr Pro Ala Ala Gly Tyr Val Glu  
 35 40 45  
 Thr Val Ala Arg Ala His Glu Ala Ala Gly Phe Asp Arg Ala Leu Val  
 50 55 60  
 Ala Phe His Ser Asn Ser Pro Asp Ser Thr Leu Ile Ala Ala His Ala  
 65 70 75 80  
 Ala Ser Val Thr Gln Lys Leu Gln Phe Leu Ile Ala His Arg Pro Gly  
 85 90 95  
 Xaa Ala Gln Pro Thr Leu Ala Ala Arg Gln Phe Ala Thr Leu Asp Val  
 100 105 110  
 Phe Asn Gly Gly Arg Thr Ala Val His Ile Ile Thr Gly Gly Asp Asp  
 115 120 125  
 Arg Glu Leu Arg Ala Asp Gly Ser His Ile Gly Lys Asp Glu Arg Tyr  
 130 135 140  
 Ala Arg Thr Asp Glu Tyr Leu Ser Val Val Arg Gln Glu Trp Thr His  
 145 150 155 160  
 Glu Gln Pro Xaa Asp Phe Lys Gly Thr Tyr Tyr Gln Val Glu Gly Ala  
 165 170 175  
 His Ser Thr Val Lys Ser Pro Gln Gln Pro His Ile Pro Leu Tyr Phe  
 180 185 190  
 Gly Gly Ser Xaa Arg Gly  
 195

&lt;210&gt; 387

&lt;211&gt; 34

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 387

Glu Leu Gly Arg Leu Arg His Pro Thr Gln Gly Lys Pro Ala Cys His  
 1 5 10 15

Ile Glu Cys Thr Ala Leu Ile Lys Phe Thr His Asp Asn Ser Ala Phe  
 20 25 30

Tyr Asn

&lt;210&gt; 388

&lt;211&gt; 207

<212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (105)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (110)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (111)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (116)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (129)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (133)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 388

Met	Arg	Pro	Trp	Arg	Phe	Gly	Trp	Pro	Arg	Thr	Leu	Ala	Ser	Gln	Leu
1				5					10					15	

Ser	Leu	Ile	Phe	Leu	Ile	Ser	Leu	Val	Cys	Ala	His	Gly	Leu	Ser	Phe
			20					25					30		

Ser	Ala	Gln	Phe	Tyr	Glu	Arg	Tyr	Ile	Ser	Ala	Arg	Thr	Val	Met	Leu
		35					40					45			

Gly	Asn	Leu	Glu	Asn	Asp	Val	Ser	Thr	Ser	Val	Ala	Ile	Leu	Asp	Arg
	50					55					60				

Leu	Pro	Ala	Asn	Glu	Arg	Ala	Ile	Gly	Trp	Arg	Val	Leu	Arg	Pro	Ala
65					70					75				80	

Glu	Leu	Pro	Val	Leu	Leu	Asn	Ala	Gly	Glu	Ala	Gly	Glu	Pro	Met	Thr
			85					90						95	

Ser	Asn	Asp	Val	Pro	Met	Ala	Ala	Xaa	Phe	Asp	Cys	Gly	Xaa	Xaa	Gly
			100					105					110		

Arg	Ala	Leu	Xaa	Pro	Asp	Leu	Ser	Arg	Tyr	Ser	Arg	His	Pro	Glu	Thr
		115				120						125			

Xaa	Pro	Gly	Ala	Xaa	Asp	Pro	Gly	Arg	Trp	Gln	Pro	Asp	His	Pro	Arg
130						135					140				



Arg Thr Pro Arg Arg Pro Ala Arg Ser Leu Leu Val Ala Gly Gly Ala  
 145 150 155 160

Gly Ala Ala Thr Gly Ala Ala Ala Arg Leu His Leu Gly Arg Gly Ala  
 165 170 175

Pro Gly Arg Ala Pro Ala Asp Thr Pro Gly Pro Cys Gly Arg Asn Pro  
 180 185 190

Arg Pro Glu Arg Ser Pro His Thr Pro Gly Arg Asn Arg Pro Glu  
 195 200 205

<210> 389  
 <211> 18  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (17)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 389  
 Gly Trp Pro Arg Trp Arg Arg Glu Arg Cys Ala Asn Thr Pro Xaa Val  
 1 5 10 15

Xaa Leu

<210> 390  
 <211> 435  
 <212> PRT  
 <213> Homo sapiens

<400> 390  
 Met Arg Pro Trp Arg Phe Gly Trp Pro Arg Thr Leu Ala Ser Gln Leu  
 1 5 10 15

Ser Leu Ile Phe Leu Ile Ser Leu Val Cys Ala His Gly Leu Ser Phe  
 20 25 30

Ser Ala Gln Phe Tyr Glu Arg Tyr Ile Ser Ala Arg Thr Val Met Leu  
 35 40 45

Gly Asn Leu Glu Asn Asp Val Ser Thr Ser Val Ala Ile Leu Asp Arg  
 50 55 60

Leu Pro Ala Asn Glu Arg Ala Ser Trp Leu Ala Arg Leu Asp Arg Gln  
 65 70 75 80

Asn	Tyr	Arg	Tyr	Leu	Leu	Asn	Ala	Gly	Glu	Ala	Gly	Glu	Pro	Met	Thr		
				85					90					95			
Ser	Asn	Asp	Val	Pro	Met	Ala	Ala	Thr	Ser	Ile	Ala	Asp	Ala	Leu	Gly		
			100					105					110				
Glu	His	Tyr	Ala	Leu	Thr	Phe	Arg	Asp	Ile	Pro	Gly	Ile	Gln	Lys	His		
		115					120					125					
Phe	Gln	Val	His	Leu	Thr	Leu	Ala	Asp	Gly	Asn	Pro	Ile	Thr	Leu	Asp		
	130					135					140						
Val	Arg	Pro	Ala	Ala	Leu	Pro	Val	Ala	Tyr	Trp	Leu	Pro	Val	Val	Leu		
145					150					155					160		
Val	Leu	Gln	Leu	Ala	Leu	Leu	Leu	Gly	Cys	Thr	Trp	Val	Ala	Val	Arg		
			165						170						175		
Leu	Ala	Val	Arg	Pro	Leu	Thr	Arg	Leu	Ala	Arg	Ala	Val	Glu	Thr	Leu		
			180					185					190				
Asp	Pro	Asn	Ala	His	Pro	Thr	Pro	Leu	Asp	Glu	Thr	Gly	Pro	Ser	Glu		
		195					200					205					
Val	Ala	His	Ala	Ala	Ala	Ala	Phe	Asn	Ala	Met	Gln	Gln	Arg	Ile	Ala		
	210					215					220						
Glu	Tyr	Leu	Lys	Glu	Arg	Met	Gln	Ile	Leu	Ala	Ala	Ile	Ser	His	Asp		
225					230					235					240		
Leu	Gln	Thr	Pro	Ile	Thr	Arg	Met	Lys	Leu	Arg	Ala	Glu	Phe	Met	Asp		
				245					250					255			
Asp	Ser	Ala	Asp	Arg	Glu	Lys	Leu	Trp	Ser	Asp	Leu	Ser	Glu	Met	Glu		
			260					265					270				
His	Leu	Val	Arg	Glu	Gly	Val	Ala	Tyr	Ala	Arg	Ser	Val	His	Gly	Ala		
	275						280						285				
Thr	Glu	Ala	Ser	His	Arg	Ile	Asp	Leu	Asp	Ala	Phe	Leu	Asp	Ser	Leu		
	290					295					300						
Val	Phe	Asp	Tyr	Gln	Asp	Met	Gln	Lys	Gln	Val	Ser	Leu	Arg	Gly	Lys		
305					310					315					320		
Ser	Ala	Leu	Ile	Leu	Asp	Thr	Arg	Pro	His	Ala	Leu	Arg	Arg	Val	Leu		
				325					330					335			
Val	Asn	Leu	Val	Asp	Asn	Ala	Leu	Lys	Phe	Ala	Gly	Asn	Ala	Glu	Leu		
			340					345					350				
Glu	Val	Gly	Ser	Thr	Ala	Asn	Gly	Gln	Leu	Ser	Ile	Lys	Val	Leu	Asp		
	355						360					365					
Gln	Gly	Pro	Gly	Ile	Ala	Glu	Asp	Glu	Leu	Ala	Gln	Val	Leu	Gln	Pro		
	370					375					380						
Phe	Tyr	Arg	Val	Glu	Ser	Ser	Arg	Asn	Arg	Gly	Thr	Gly	Gly	Thr	Gly		
385					390					395					400		

Leu Gly Leu Ala Ile Ala Gln Gln Leu Ala Val Ala Ile Gly Gly Thr  
 405 410 415

Leu Thr Leu Ser Asn Arg Val Glu Gly Gly Leu Cys Ala Glu Ile Arg  
 420 425 430

Leu Ser Leu  
 435

<210> 391  
 <211> 34  
 <212> PRT  
 <213> Homo sapiens

<400> 391  
 Cys Lys Trp Val Gln Asn Gly Gly His Pro Asn Val Glu Ser Ser Lys  
 1 5 10 15

Tyr His Cys His Glu Pro Lys Ala Ser Leu Tyr Thr Leu Glu Glu Ser  
 20 25 30

Thr Leu

<210> 392  
 <211> 28  
 <212> PRT  
 <213> Homo sapiens

<400> 392  
 Leu Leu Leu Cys Lys Phe Lys Lys Val Asn Tyr Phe Leu Lys Val Leu  
 1 5 10 15

Ile Ser Asn Phe Ser Ile Trp Ala Tyr Asp His His  
 20 25

<210> 393  
 <211> 36  
 <212> PRT  
 <213> Homo sapiens

<400> 393  
 Met Ala Gly His Pro Thr Leu Ile Leu Leu Cys Lys Trp Ala Phe His  
 1 5 10 15

Leu Thr Gly Ala Ile Cys Glu Pro Tyr Leu Asn Gln Thr Leu Pro Thr  
 20 25 30

Gln Ala Cys Leu  
 35

<210> 394

<211> 36  
 <212> PRT  
 <213> Homo sapiens

<400> 394  
 Met Ala Gly His Pro Thr Leu Ile Leu Leu Cys Lys Trp Ala Phe His  
     1                    5                    10                    15  
 Leu Thr Gly Ala Ile Cys Glu Pro Tyr Leu Asn Gln Thr Leu Pro Thr  
                     20                    25                    30  
 Gln Ala Cys Leu  
                     35

<210> 395  
 <211> 41  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 395  
 Met Trp Leu Met Leu Ile Leu Ser Leu Thr Ser Gly Glu Thr Xaa Ala  
     1                    5                    10                    15  
 Leu Arg Gly Cys Cys Ser Ser Ser Trp Thr Tyr Gly Glu Ser Ala Ala  
                     20                    25                    30  
 Gly Pro Ala Asp Gln Ala Pro Cys Leu  
                     35                    40

<210> 396  
 <211> 41  
 <212> PRT  
 <213> Homo sapiens

<400> 396  
 Met Trp Leu Met Leu Ile Leu Ser Leu Thr Ser Gly Glu Thr Glu Ala  
     1                    5                    10                    15  
 Leu Arg Gly Cys Cys Ser Ser Ser Trp Thr Tyr Gly Glu Ser Ala Ala  
                     20                    25                    30  
 Gly Pro Ala Asp Gln Ala Pro Cys Leu  
                     35                    40

<210> 397  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 397

Ile Phe Ala Leu Ser Leu Ser Phe Tyr Thr Cys Ile His Ile His Thr  
 1 5 10 15

His Arg His Thr  
 20

&lt;210&gt; 398

&lt;211&gt; 117

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 398

Met Cys Thr Leu Phe Val Leu Ala Val Leu Leu Pro Val Leu Phe Leu  
 1 5 10 15

Leu Tyr Arg His Arg Asn Ser Met Lys Val Phe Leu Lys Gln Gly Glu  
 20 25 30

Cys Ala Ser Val His Pro Lys Thr Cys Pro Val Val Leu Pro Pro Glu  
 35 40 45

Thr Arg Pro Leu Asn Gly Leu Gly Pro Pro Ser Thr Pro Leu Asp His  
 50 55 60

Arg Gly Tyr Gln Ser Leu Ser Asp Ser Pro Pro Gly Ala Arg Val Phe  
 65 70 75 80

Thr Glu Ser Glu Lys Arg Pro Leu Ser Ile Gln Asp Ser Phe Val Glu  
 85 90 95

Val Ser Pro Val Cys Pro Arg Pro Arg Val Arg Leu Gly Ser Glu Ile  
 100 105 110

Arg Asp Ser Val Val  
 115

&lt;210&gt; 399

&lt;211&gt; 183

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 399

Met Met Asn Val Ser Lys Ile Ser Phe Phe Ala Met Phe Leu Met Tyr  
 1 5 10 15

Leu Leu Ala Ala Leu Phe Gly Tyr Leu Thr Phe Tyr Glu His Val Glu  
 20 25 30

Ser Glu Leu Leu His Thr Tyr Ser Ser Ile Leu Gly Thr Asp Ile Leu  
 35 40 45

Leu Leu Ile Val Arg Leu Ala Val Leu Met Ala Val Thr Leu Thr Val  
 50 55 60

Pro Val Val Ile Phe Pro Ile Arg Ser Ser Val Thr His Leu Leu Cys

65		70		75		80
Ala Ser Lys Asp Phe Ser Trp Trp Arg His Ser Leu Ile Thr Val Ser						
	85			90		95
Ile Leu Ala Phe Thr Asn Leu Leu Val Ile Phe Val Pro Thr Ile Arg						
	100		105			110
Asp Ile Phe Gly Phe Ile Gly Ala Ser Ala Ala Ser Met Leu Ile Phe						
	115		120			125
Ile Leu Pro Ser Ala Phe Tyr Ile Lys Leu Val Lys Lys Glu Pro Met						
	130		135			140
Lys Ser Val Gln Lys Ile Gly Ala Leu Phe Phe Leu Leu Ser Gly Val						
	145		150		155	160
Leu Val Met Thr Gly Ser Met Ala Leu Ile Val Leu Asp Trp Val His						
		165		170		175
Asn Ala Pro Gly Gly Gly His						
	180					

<210> 400  
 <211> 38  
 <212> PRT  
 <213> Homo sapiens

<400> 400  
 Met Val Ser Lys His Ser Leu Asn Leu His Phe Phe Tyr Trp Lys Gly  
 1 5 10 15  
 Gly Cys Ala Cys Phe Thr Ser Glu Pro Arg Val Phe Val Val Val Glu  
 20 25 30  
 Leu Ser Leu Leu Asp Cys  
 35

<210> 401  
 <211> 38  
 <212> PRT  
 <213> Homo sapiens

<400> 401  
 Met Val Ser Lys His Ser Leu Asn Leu His Phe Phe Tyr Trp Lys Gly  
 1 5 10 15  
 Gly Cys Ala Cys Phe Thr Ser Glu Pro Arg Val Phe Val Val Val Glu  
 20 25 30  
 Leu Ser Leu Leu Asp Cys  
 35

<210> 402

<211> 92  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (10)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (49)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 402  
 Ile Gly Pro Leu Leu Val Tyr Val Ser Xaa Thr His Glu Ser Leu Lys  
   1                  5                  10                  15  
 Leu Trp Gln Leu Lys Glu Thr Leu Ile Gln Ser Phe Pro Ala Leu Val  
                   20                  25                  30  
 Arg Ser Leu Gly Pro Gly Leu Leu Phe Gly Pro Pro Ile Ala Thr Gly  
           35                  40                  45  
 Xaa Thr Gln Ala Gly Asp Met Ala Asp Lys Ser Gln Ala Gly Pro Arg  
   50                  55                  60  
 Gly Ser Val Ser Ser Val Ala Trp Gly Pro Phe Pro Gly Gly Ser Gly  
 65                  70                  75                  80  
 Ala Leu Ala Phe Cys Pro Leu Ile Leu Arg Ser His  
                   85                  90

<210> 403  
 <211> 24  
 <212> PRT  
 <213> Homo sapiens

<400> 403  
 Met His Ile Phe Thr Ile Leu Tyr Pro Ile Ser Glu Gly Phe Phe Lys  
   1                  5                  10                  15  
 Ile Phe Asn Phe Ile Val Phe Phe  
                   20

<210> 404  
 <211> 69  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (1)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 404

Xaa Ser Gly Asp Leu Pro Thr Ser Ala Phe Pro Lys Cys Trp Asp Tyr  
 1 5 10 15  
 Arg Pro Glu Pro Pro Cys Pro Ala Gln Ala Gln Thr Ser Val Leu Cys  
 20 25 30  
 Val Thr Ser Trp Ser Arg Leu Thr Val Ser Thr Leu Thr Ser Thr Ser  
 35 40 45  
 Gln Ala Glu Gly Val Arg Ala Leu Pro Ile Trp Pro Ser Ser Gln Val  
 50 55 60  
 Cys Ser Ile Gln Pro  
 65

<210> 405  
 <211> 110  
 <212> PRT  
 <213> Homo sapiens

<400> 405  
 Ser Gln Gln Thr Leu Leu Ile Arg Pro Cys Cys Asn Lys Gln Thr Pro  
 1 5 10 15  
 Ile Thr Asn His Pro His Cys Thr Gly Gly Gly His Gly Lys His Lys  
 20 25 30  
 Gln Thr Leu Pro Thr Pro Ser Cys Asn Lys Arg His Lys Val Ile Cys  
 35 40 45  
 Ser Lys Ile Asn Gln Gln Thr Thr Pro Gly Cys Gly His Thr Lys Glu  
 50 55 60  
 Leu His Gln Thr Pro Leu Pro Asn Ile Asn Pro Ser Phe Cys Lys Leu  
 65 70 75 80  
 Gly Ala Thr Ser Ser Leu Thr Val Lys Gly Ala Ala Ser Arg Leu Ile  
 85 90 95  
 Lys Ser Tyr Leu Pro Lys Lys Lys Lys Lys Lys Asn Ser Arg  
 100 105 110

<210> 406  
 <211> 79  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (67)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 406  
 Met Val Phe Phe Gln Ile Gln Ser Leu Leu Ser Phe Leu Ala Ser Ser  
 1 5 10 15



Leu Ser Ile Ile Phe Leu Leu Pro Arg Cys Leu Ile Pro Pro Ala Asn  
                   20                  25                  30  
 Gly Thr Ala Gly Ser Ser Cys Ser Glu Phe Gln Thr Leu His Thr Phe  
                   35                  40                  45  
 His Pro Gln Ala Ser Cys Ala His Ala Gly Pro Ser Asn Leu Tyr Thr  
                   50                  55                  60  
 Phe Leu Xaa Leu Phe Asp Leu Ser Ala Lys Val Ser Pro Leu Met  
                   65                  70                  75

<210> 407  
 <211> 79  
 <212> PRT  
 <213> Homo sapiens

<400> 407  
 Met Val Phe Phe Gln Ile Gln Ser Leu Leu Ser Phe Leu Ala Ser Ser  
           1                  5                  10                  15  
 Leu Ser Ile Ile Phe Leu Leu Pro Arg Cys Leu Ile Pro Pro Ala Asn  
                   20                  25                  30  
 Gly Thr Ala Gly Ser Ser Cys Ser Glu Phe Gln Thr Leu His Thr Phe  
                   35                  40                  45  
 His Pro Gln Ala Ser Cys Ala His Ala Gly Pro Ser Asn Leu Tyr Thr  
                   50                  55                  60  
 Phe Leu Arg Leu Phe Asp Leu Ser Ala Lys Val Ser Pro Leu Met  
                   65                  70                  75

<210> 408  
 <211> 325  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (10)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (136)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (186)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (234)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 408

Val	Pro	Pro	Ala	Val	Cys	Pro	Ala	Gly	Xaa	Phe	Cys	Gln	Asn	Gln	Cys	1	5	10	15
Phe	Thr	Lys	Arg	Gln	Tyr	Pro	Glu	Thr	Lys	Ile	Ile	Lys	Thr	Asp	Gly	20	25	30	
Lys	Gly	Trp	Gly	Leu	Val	Ala	Lys	Arg	Asp	Ile	Arg	Lys	Gly	Glu	Phe	35	40	45	
Val	Asn	Glu	Tyr	Val	Gly	Glu	Leu	Ile	Asp	Glu	Glu	Glu	Cys	Met	Ala	50	55	60	
Arg	Ile	Lys	His	Ala	His	Glu	Asn	Asp	Ile	Thr	His	Phe	Tyr	Met	Leu	65	70	75	
Thr	Ile	Asp	Lys	Asp	Arg	Ile	Ile	Asp	Ala	Gly	Pro	Lys	Gly	Asn	Tyr	85	90	95	
Ser	Arg	Phe	Met	Asn	His	Ser	Cys	Gln	Pro	Asn	Cys	Glu	Thr	Leu	Lys	100	105	110	
Trp	Thr	Val	Asn	Gly	Asp	Thr	Arg	Val	Gly	Leu	Phe	Ala	Val	Cys	Asp	115	120	125	
Ile	Pro	Ala	Gly	Thr	Glu	Leu	Xaa	Phe	Asn	Tyr	Asn	Leu	Asp	Cys	Leu	130	135	140	
Gly	Asn	Glu	Lys	Thr	Val	Cys	Arg	Cys	Gly	Ala	Ser	Asn	Cys	Ser	Gly	145	150	155	
Phe	Leu	Gly	Asp	Arg	Pro	Lys	Thr	Ser	Thr	Thr	Leu	Ser	Ser	Glu	Glu	165	170	175	
Lys	Gly	Lys	Lys	Thr	Lys	Lys	Lys	Thr	Xaa	Arg	Arg	Arg	Ala	Lys	Gly	180	185	190	
Glu	Gly	Lys	Arg	Gln	Ser	Glu	Asp	Glu	Cys	Phe	Arg	Cys	Gly	Asp	Gly	195	200	205	
Gly	Gln	Leu	Val	Leu	Cys	Asp	Arg	Lys	Phe	Cys	Thr	Lys	Ala	Tyr	His	210	215	220	
Leu	Ser	Cys	Leu	Gly	Leu	Gly	Lys	Arg	Xaa	Phe	Gly	Lys	Trp	Glu	Cys	225	230	235	
Pro	Trp	His	His	Cys	Asp	Val	Cys	Gly	Lys	Pro	Ser	Thr	Ser	Phe	Cys	245	250	255	
His	Leu	Cys	Pro	Asn	Ser	Phe	Cys	Lys	Glu	His	Gln	Asp	Gly	Thr	Ala	260	265	270	
Phe	Ser	Cys	Thr	Pro	Asp	Gly	Arg	Ser	Tyr	Cys	Cys	Glu	His	Asp	Leu	275	280	285	
Gly	Ala	Ala	Ser	Val	Arg	Ser	Thr	Lys	Thr	Glu	Lys	Pro	Pro	Pro	Glu	290	295	300	

Pro Gly Lys Pro Lys Gly Lys Arg Arg Arg Arg Arg Gly Trp Arg Arg  
 305 310 315 320

Val Thr Glu Gly Lys  
 325

<210> 409

<211> 161

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (123)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (129)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (145)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (146)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (157)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 409

Met Thr Thr Trp Ser Cys Leu Val Ala Met Ile Val Ser Gly Val Ile  
 1 5 10 15

Thr Ala Val Trp Ala Val Arg Ala Ala Pro Ile Trp Arg Ser Gln Val  
 20 25 30

Lys Gln Lys Met Arg Ile Gly Lys Gln Gly Asn Cys Arg Pro Pro Arg  
 35 40 45

Cys Ile Cys Ser Ala Leu Gly Leu Leu Ala Pro Trp Met Ala Val Val  
 50 55 60

Leu Ser Gln Leu Ser Val Arg Cys Val Val Ser Trp Val Gln Gly Lys  
 65 70 75 80

Pro Ser Ser Pro Arg Pro Arg Gly Ser Ala Ala Ser Pro Ala Pro Gly  
 85 90 95

Ala Thr Pro Pro Thr Pro Arg Lys Pro Val Ser Trp Leu Gly Tyr Arg  
 100 105 110

Glu Asn His Arg Pro Lys Lys Pro Lys Ser Xaa Thr Arg Cys Leu Val  
 115 120 125

Xaa Gln Asn Trp Ser Leu Pro Pro Ile Ser Lys Asp Arg Thr Ala Gly  
 130 135 140

Xaa Xaa Asp Thr Asn Arg Thr Arg Arg Ser Gly Leu Xaa Leu Arg Leu  
 145 150 155 160

Gly

<210> 410

<211> 57

<212> PRT

<213> Homo sapiens

<400> 410

Arg Pro Val Ser Thr Lys Lys Lys Lys Val Ser Trp Ala Trp Trp Cys  
 1 5 10 15

Thr Ser Ile Ala Pro Ala Thr Leu Glu Ala Lys Val Arg Gly Leu Leu  
 20 25 30

Glu Pro Gly Arg Ser Val Ser Ala Val Ser Cys Asp Pro Ala Asn Ala  
 35 40 45

Leu Ser Leu Gly Ser Val Arg Pro Cys  
 50 55

<210> 411

<211> 58

<212> PRT

<213> Homo sapiens

<400> 411

Val Leu Cys Leu Gln Ile Tyr Cys Gln Thr Arg Phe Ser Ser Ser Leu  
 1 5 10 15

Ser Thr Ser Phe Thr Val Leu Asn Cys Met Tyr Arg Ser Val Ile Leu  
 20 25 30

Ser Glu Leu Thr Phe Val Lys Asp Lys Arg Ser Val Leu Asp Arg Tyr  
 35 40 45

Phe Pro Phe Ala Cys Gly Cys Pro Ala Pro  
 50 55

<210> 412

<211> 141

<212> PRT

<213> Homo sapiens

<400> 412

Met Lys Ser Thr Leu Ser Ile Phe Ser Leu Trp Val Met Ile Phe Val  
 1 5 10 15  
 Leu Cys Leu Gln Ile Tyr Cys Gln Thr Arg Phe Ser Ser Ser Leu Ser  
 20 25 30  
 Thr Ser Phe Thr Val Leu Asn Cys Met Tyr Arg Ser Val Ile Leu Ser  
 35 40 45  
 Glu Leu Thr Phe Val Lys Asp Lys Arg Ser Val Leu Asp Arg Leu Phe  
 50 55 60  
 Phe Leu Leu His Val Val Val Gln His His Glu Asp Ser Ser Phe Ser  
 65 70 75 80  
 Thr Glu Leu Ser Leu Tyr Phe Cys Gln Arg Ser Asp Leu Pro Leu Lys  
 85 90 95  
 Ser Leu Ser Asn Leu Ser Thr Ser His His Leu His Phe Gln Ser Leu  
 100 105 110  
 Arg Thr Arg Gly Arg Thr Arg Gly Ser Thr Arg Glu Phe Arg Thr Gly  
 115 120 125  
 Thr Cys Arg Arg Thr Ser Phe Pro Tyr Ser Glu Ser Tyr  
 130 135 140

&lt;210&gt; 413

&lt;211&gt; 141

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 413

Met Lys Ser Thr Leu Ser Ile Phe Ser Leu Trp Val Met Ile Phe Val  
 1 5 10 15  
 Leu Cys Leu Gln Ile Tyr Cys Gln Thr Arg Phe Ser Ser Ser Leu Ser  
 20 25 30  
 Thr Ser Phe Thr Val Leu Asn Cys Met Tyr Arg Ser Val Ile Leu Ser  
 35 40 45  
 Glu Leu Thr Phe Val Lys Asp Lys Arg Ser Val Leu Asp Arg Leu Phe  
 50 55 60  
 Phe Leu Leu His Val Val Val Gln His His Glu Asp Ser Ser Phe Ser  
 65 70 75 80  
 Thr Glu Leu Ser Leu Tyr Phe Cys Gln Arg Ser Asp Leu Pro Leu Lys  
 85 90 95  
 Ser Leu Ser Asn Leu Ser Thr Ser His His Leu His Phe Gln Ser Leu  
 100 105 110  
 Gln Ala Thr Ile Leu Ser Cys Leu Ile Ile Ala Val Val Leu Thr Gly  
 115 120 125  
 Leu Ala Leu Ser Val Asp Pro Cys Phe Ile His Arg Ile

130

135

140

<210> 414  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 414  
 Met Leu Glu Thr Leu Ser Gln Phe Ile Ser Ile Leu Phe Val Leu Leu  
   1                  5                  10                  15  
 Trp Ile Ile Ser Asp Leu Ile Leu Cys Phe Leu Lys Cys Gly Asn Pro  
                   20                  25                  30  
 Gly Thr Leu Asp Met Val Leu Pro Ile Trp Thr Asn Gln Tyr Ile His  
           35                  40                  45  
 Ser Ser Arg Ser Ile Leu Ser Phe Ile  
   50                  55

<210> 415  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 415  
 Met Leu Glu Thr Leu Ser Gln Phe Ile Ser Ile Leu Phe Val Leu Leu  
   1                  5                  10                  15  
 Trp Ile Ile Ser Asp Leu Ile Leu Cys Phe Leu Lys Cys Gly Asn Pro  
                   20                  25                  30  
 Gly Thr Leu Asp Met Val Leu Pro Ile Trp Thr Asn Gln Tyr Thr His  
           35                  40                  45  
 Ser Ser Arg Ser Ile Leu Ser Phe Ile  
   50                  55

<210> 416  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (14)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (59)  
 <223> Xaa equals any of the naturally occurring L-amino acids.  
 <220>

&lt;221&gt; SITE

&lt;222&gt; (68)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 416

Leu Leu Phe Leu Leu Gly Met Ala Trp Phe Asn Asp Trp Xaa Ala Ala  
 1 5 10 15

Leu Tyr Met Pro Ala Phe Cys Ala Ile Leu Val Ala Leu Phe Ala Phe  
 20 25 30

Ala Met Met Arg Asp Thr Pro Gln Ser Cys Gly Leu Pro Pro Ile Glu  
 35 40 45

Glu Tyr Lys Asn Asp Tyr Pro Asp Asp Tyr Xaa Glu Lys Ala Glu Gln  
 50 55 60

Glu Leu Thr Xaa Lys Gln Pro Gly Gly Arg Arg Leu Trp Leu His Pro  
 65 70 75 80

Ala Tyr Thr Ala Ala  
 85

&lt;210&gt; 417

&lt;211&gt; 66

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 417

Met Leu Phe Met Gly Phe Val Pro Trp Ala Thr Ser Ser Ile Ala Val  
 1 5 10 15

Met Phe Val Leu Leu Phe Leu Cys Gly Trp Phe Gln Gly Met Gly Trp  
 20 25 30

Pro Pro Cys Gly Arg Thr Met Val His Trp Trp Ser Gln Lys Glu Arg  
 35 40 45

Gly Gly Ile Val Ser Val Trp Asn Cys Ala His Asn Val Gly Gly Trp  
 50 55 60

Val Phe  
 65

&lt;210&gt; 418

&lt;211&gt; 152

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 418

Met Leu Phe Met Gly Phe Val Pro Trp Ala Thr Ser Ser Ile Ala Val  
 1 5 10 15

Met Phe Val Leu Leu Phe Leu Cys Gly Trp Phe Gln Gly Met Gly Trp  
 20 25 30

Pro Pro Cys Gly Arg Thr Met Val His Trp Trp Ser Gln Lys Glu Arg  
           35                          40                          45  
 Gly Gly Ile Val Ser Val Trp Asn Cys Ala His Asn Val Gly Gly Gly  
           50                          55                          60  
 Ile Pro Pro Leu Leu Phe Leu Leu Gly Met Ala Trp Phe Asn Asp Trp  
       65                          70                          75                          80  
 His Ala Ala Leu Tyr Met Pro Ala Phe Cys Ala Ile Leu Val Ala Leu  
                           85                          90                          95  
 Phe Ala Phe Ala Met Met Arg Asp Thr Pro Gln Ser Cys Gly Leu Pro  
                          100                         105                         110  
 Pro Ile Glu Glu Tyr Lys Asn Asp Tyr Pro Asp Asp Tyr Asn Glu Lys  
          115                         120                         125  
 Ala Glu Gln Glu Leu Thr Ala Lys Gln Pro Gly Gly Arg Arg Leu Trp  
       130                         135                         140  
 Leu His Pro Ala Tyr Thr Ala Ala  
   145                         150

<210> 419  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 419  
 Met Val Met Gly Leu Lys Ala Leu Pro Glu Pro Phe Met Ser Leu Val  
       1                          5                          10                          15  
 Ser His Leu Leu Arg Thr Phe Phe Leu Val Trp Phe Val Gly Leu Pro  
                          20                         25                         30  
 Val Ala Ile Leu Gly Asn Leu Leu Glu Cys Tyr Ala Asn Val Phe Thr  
          35                         40                         45  
 Gly Asn Gly Gly Gly Pro Glu Pro Trp Gly Gly His Leu Val Ser Glu  
       50                         55                         60  
 Cys Leu Ala Leu Pro Gln Leu Gly Ile Gln Tyr Leu Ala Leu Ser Gly  
       65                         70                         75                         80  
 Gly Ile Ile Trp Leu  
                          85

<210> 420  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 420  
 Met Val Met Gly Leu Lys Ala Leu Pro Glu Pro Phe Met Ser Leu Val  
       1                          5                          10                          15



Ser His Leu Leu Arg Thr Phe Phe Leu Val Trp Phe Val Gly Leu Pro  
                   20                                  25                                  30

Val Ala Ile Leu Gly Asn Leu Leu Glu Cys Tyr Ala Asn Val Phe Thr  
                   35                                  40                                  45

Gly Asn Gly Gly Gly Pro Glu Pro Trp Gly Gly His Leu Val Ser Glu  
                   50                                  55                                  60

Cys Leu Ala Leu Pro Gln Leu Gly Ile Gln Tyr Leu Ala Leu Ser Gly  
                   65                                  70                                  75                                  80

Gly Ile Ile Trp Leu  
                                   85

<210> 421  
 <211> 64  
 <212> PRT  
 <213> Homo sapiens

<400> 421  
 Met Trp Glu Thr Tyr Ile Trp Leu Val Leu Thr Phe Ala Gln Lys Ala  
           1                                  5                                  10                                  15

Cys Cys Met Lys Leu Thr Ala Thr Met Leu Lys Gln Ile His Ile Lys  
                   20                                  25                                  30

Lys Cys Arg Ser Ile Gln Trp Leu Leu Arg Val Asn Ser Phe Met Glu  
                   35                                  40                                  45

Ser Ser Met Ser Leu Ser Ser Lys Ile Arg Pro His Gln Arg Arg Asn  
           50                                  55                                  60

<210> 422  
 <211> 64  
 <212> PRT  
 <213> Homo sapiens

<400> 422  
 Met Trp Glu Thr Tyr Ile Trp Leu Val Leu Thr Phe Ala Gln Lys Ala  
           1                                  5                                  10                                  15

Cys Cys Met Lys Leu Thr Ala Thr Met Leu Lys Gln Ile His Ile Lys  
                   20                                  25                                  30

Lys Cys Arg Ser Ile Gln Trp Leu Leu Arg Val Asn Ser Phe Met Glu  
                   35                                  40                                  45

Ser Ser Met Ser Leu Ser Ser Lys Ile Arg Pro His Gln Arg Arg Asn  
           50                                  55                                  60

<210> 423  
 <211> 47  
 <212> PRT  
 <213> Homo sapiens

<400> 423  
 Ser Gln Leu Leu Arg Lys Leu Arg Trp Glu Asp Gly Leu Ser Leu Gly  
     1                    5                    10                    15  
 Gly Arg Val Cys Ser Glu Pro Arg Leu His His Cys Thr Pro Ala Trp  
             20                    25                    30  
 Val Ile Gly Pro Gly Leu Val Leu Thr Thr Thr Thr Glu Lys Lys  
             35                    40                    45

<210> 424  
 <211> 54  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (4)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (23)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 424  
 Ile Glu Thr Xaa Arg Phe Gly Gly Lys Gln Met Glu Leu Gln Glu Ile  
     1                    5                    10                    15  
 Lys Ser Ile Ile Ser Ser Xaa Met Trp Trp Leu Met Pro Leu Ile Leu  
             20                    25                    30  
 Val Thr Gln Glu Ala Glu Ala Gly Gly Ser Leu Glu Ala Arg Ser Leu  
             35                    40                    45  
 Arg Pro Pro Trp Ala Thr  
     50

<210> 425  
 <211> 199  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (195)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 425

Lys Ala Gly Thr Pro Ala Gly Thr Gly Pro Glu Phe Pro Gly Arg Pro  
 1 5 10 15

Thr Arg Pro Ile Tyr Ile Arg Arg Tyr Val Phe Lys Leu Gly Val Leu  
 20 25 30

Gly Trp Gly Ala Pro Ala Leu Leu Val Leu Leu Ser Leu Ser Val Lys  
 35 40 45

Ser Ser Val Tyr Gly Pro Cys Thr Ile Pro Val Phe Asp Ser Trp Glu  
 50 55 60

Asn Gly Thr Gly Phe Gln Asn Met Ser Ile Cys Trp Val Arg Ser Pro  
 65 70 75 80

Val Val His Ser Val Leu Val Met Gly Tyr Gly Gly Leu Thr Ser Leu  
 85 90 95

Phe Asn Leu Val Val Leu Ala Trp Ala Leu Trp Thr Leu Arg Arg Leu  
 100 105 110

Arg Glu Arg Ala Asp Ala Pro Ser Val Arg Ala Cys His Asp Thr Val  
 115 120 125

Thr Val Leu Gly Leu Thr Val Leu Leu Gly Thr Thr Trp Ala Leu Ala  
 130 135 140

Phe Phe Ser Phe Gly Val Phe Leu Leu Pro Gln Leu Phe Leu Phe Thr  
 145 150 155 160

Ile Leu Asn Ser Leu Tyr Gly Phe Phe Leu Phe Leu Trp Phe Cys Ser  
 165 170 175

Gln Arg Cys Arg Ser Glu Ala Glu Ala Lys Ala Gln Ile Glu Ala Phe  
 180 185 190

Ser Ser Xaa Gln Thr Thr Gln  
 195

&lt;210&gt; 426

&lt;211&gt; 160

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (133)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (146)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 426

Met Ser Ser Leu Ala Ser Trp Trp Pro Ser Tyr Gly Arg Thr Gln Met

1	5	10	15
Asn Ser Arg Ala Ser Val Ala Gly Pro Ser Trp Leu Phe Cys Ser Ala	20	25	30
Pro Phe Pro His Cys Leu Ser Tyr Arg Ser His Cys Ser Ser Ser Cys	35	40	45
Leu Thr Arg Pro Pro Gly Ala Trp Gln Arg Cys Ala Ser Thr Ser Cys	50	55	60
Trp Gly Pro Trp Ser Ser Arg Ser Trp Pro Arg Gly Pro Leu Gly Pro	65	70	75
Thr Pro Arg Pro Ser Trp Ser Gly Trp Pro Asp Gly Gly Gly Ala Ala	85	90	95
Trp Arg Trp Met Cys Ser Pro Ser Ala Arg Ser Ala Thr Arg Pro Arg	100	105	110
Trp Ser Leu Gly Pro Pro Gly Ser Ser Trp Leu Gly Gly Ser Cys Arg	115	120	125
Ala Glu Ala Trp Xaa Arg Leu Pro Gly Ala Gly Leu Cys His Cys Thr	130	135	140
Pro Xaa Thr His Gly Arg Thr Trp Leu Ala Ala Thr Leu Cys Trp Thr	145	150	155
			160

<210> 427  
 <211> 13  
 <212> PRT  
 <213> Homo sapiens

<400> 427  
 Trp Pro Ser Ser Ser Arg Thr Leu Ser Ser Ser Arg Arg  
 1 5 10

<210> 428  
 <211> 47  
 <212> PRT  
 <213> Homo sapiens

<400> 428  
 Ile Leu Lys Ser Glu Pro Lys Leu Val Ser Phe Ile Asn Ile Leu Gly  
 1 5 10 15  
 Lys Glu Glu Arg Lys Lys Glu Gly Gly Arg Glu Arg Lys Lys Glu Arg  
 20 25 30  
 Lys Lys Glu Arg Lys Lys Glu Arg Lys Lys Lys Lys Lys Asn Ser  
 35 40 45

<210> 429  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 429  
 Met Ser Leu Ile Trp Arg Asp Val Tyr Leu Tyr Gly Cys Gly Cys Ile  
     1                    5                    10                    15  
 Cys His Gly Arg Cys Cys Ala Gly Phe Pro Gln His Ser Arg His Val  
             20                    25                    30  
 Trp Arg Thr Asn Ala Gly Leu Ile Leu Pro Gly Asn Arg Val Pro Phe  
             35                    40                    45  
 Cys Glu Leu Glu Gly Cys Thr Arg Arg Ser Ser Tyr Trp Asn His Leu  
             50                    55                    60  
 Val Ile Leu Gly Gly His Trp Gly Leu His Leu Pro Cys Thr Ser Leu  
     65                    70                    75                    80

<210> 430  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 430  
 Met Ser Leu Ile Trp Arg Asp Val Tyr Leu Tyr Gly Cys Gly Cys Ile  
     1                    5                    10                    15  
 Cys His Gly Arg Cys Cys Ala Gly Phe Pro Gln His Ser Arg His Val  
             20                    25                    30  
 Trp Arg Thr Asn Ala Gly Leu Ile Leu Pro Gly Asn Arg Val Pro Phe  
             35                    40                    45  
 Cys Glu Leu Glu Gly Cys Thr Arg Arg Ser Ser Tyr Trp Asn His Leu  
             50                    55                    60  
 Val Ile Leu Gly Gly His Trp Gly Leu His Leu Pro Cys Thr Ser Leu  
     65                    70                    75                    80

<210> 431  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<220>

&lt;221&gt; SITE .

&lt;222&gt; (7)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (13)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (17)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 431

Leu	Gly	Lys	Val	Gly	Asn	Xaa	Cys	Arg	Tyr	Arg	Ser	Xaa	Ile	Pro	Gly
1				5				10					15		

Xaa	Thr	His	Ala	Ser	Gly	Leu	Glu	Ser	Thr	Phe	Glu	Leu	Pro	Glu	Glu
		20					25						30		

Phe	Arg	Phe	Leu	Leu	Val	Ser	Phe	Val	Phe	Gln	Thr	His	Glu	Met	Ala
	35					40						45			

Thr	Asp	Asp	Lys	Thr	Ser	Pro	Thr	Leu	Asp	Ser	Ala	Asn	Asp	Leu	Pro
	50					55					60				

Arg	Ser	Pro	Thr	Ser	Ser	Ser	His	Leu	Thr	His	Phe	Lys	Pro	Leu	Thr
	65				70					75					80

Pro	Asp	Gln	Asp	Glu	Pro	Pro	Phe	Lys	Ser	Ala	Tyr	Ser	Ser	Phe	Val
			85						90					95	

Asn	Leu	Phe	Arg	Phe	Asn	Lys	Gly	Lys	Thr	Tyr
		100					105			

&lt;210&gt; 432

&lt;211&gt; 46

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 432

Met	Cys	Cys	Arg	Ala	Ile	Ser	Gly	Cys	Cys	Gly	Thr	Cys	Leu	Ala	Cys
1				5				10					15		

Leu	Cys	Ser	Thr	Ala	Ser	Gly	Ala	Pro	Gln	Pro	Trp	Pro	Cys	Ser	Arg
			20					25					30		

Gln	Ser	Thr	Trp	Arg	Leu	Ile	Pro	Arg	Pro	Ser	Ala	Pro	Thr
	35						40					45	

&lt;210&gt; 433

&lt;211&gt; 43

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

<220>  
 <221> SITE  
 <222> (5)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (35)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (36)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 433  
 Ser Gly Phe Val Xaa Ala Trp Ser Ile Leu Thr Pro Gly Cys Ile Ser  
           1                  5                  10                  15  
 Pro Ala Gly Glu Lys Cys Arg Gly Gly Lys Gln Ser Leu Gly Thr Asn  
                   20                  25                  30  
 Tyr Phe Xaa Xaa Val Leu Leu Ala Thr Asp Ser  
           35                  40

<210> 434  
 <211> 76  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (73)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 434  
 Met His Leu Pro Leu Ser Thr Lys Gly Ile Leu Pro Arg Ile Leu Leu  
           1                  5                  10                  15  
 Leu Phe Ile Lys Thr Leu Phe Ala Phe Leu Leu Ser Asp Gln Cys Lys  
                   20                  25                  30  
 Gly Leu Ala His Leu Trp Leu Arg Arg Glu Cys Gly Pro Gly Gly  
           35                  40                  45  
 Leu Thr Cys Ala Ala Glu Glu Leu Lys Ser Tyr Thr Ser Ile Phe Ala  
           50                  55                  60  
 Pro Lys Leu Gly Val Val Gly Gly Xaa Glu Met Lys  
           65                  70                  75

<210> 435  
 <211> 38  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (12)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (14)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (38)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 435  
 Pro Ile Ser Thr Lys Asn Arg Lys Ile Ser Arg Xaa Trp Xaa Cys Val  
           1                  5                  10                  15  
 Pro Val Ile Pro Ala Thr Arg Glu Ala Glu Ala Gly Glu Ser Leu Glu  
                   20                  25                  30  
 Pro Arg Arg Trp Arg Xaa  
                   35

<210> 436  
 <211> 74  
 <212> PRT  
 <213> Homo sapiens

<400> 436  
 Leu Tyr Gly Lys Ser Lys Thr Glu Val Lys Ile Ser Pro Val Ser Asn  
           1                  5                  10                  15  
 Leu His Ser Phe Arg Leu Gln Gly Val Ser Leu Tyr Val Glu Ala Gly  
                   20                  25                  30  
 Ser Leu Val Glu Phe Gln Gly Ser Lys Arg Gly Thr Asn Ile Cys Arg  
           35                  40                  45  
 Phe Cys Leu Leu Trp Gly Asn Ser Phe Asn His Gln Glu Asn Ser Ser  
           50                  55                  60  
 Ile Gly Phe Ile Cys Ser Gly Leu Pro Arg  
           65                  70

<210> 437  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 437  
 Met Ala Trp Ser Arg Ala Ala Trp Thr Val Met Arg Ser Leu Leu Ile  
           1                  5                  10                  15  
 Cys Trp Leu Val Ser Ala Tyr Ile Leu Ala Thr Val Thr Asp Val Gln



20 25 30  
 Gly Ser His Ile Gly Ile Pro Gly Ser Leu Leu Glu Leu Arg His His  
           35                          40                          45

Pro Arg Ser Asn Glu Ser Glu Ser Ala Cys  
           50                          55

<210> 438  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 438  
 Met Ala Trp Ser Arg Ala Ala Trp Thr Val Met Arg Ser Leu Leu Ile  
           1                          5                          10                          15

Cys Trp Leu Val Ser Ala Tyr Ile Leu Ala Thr Val Thr Asp Val Gln  
                           20                          25                          30

Gly Ser His Ile Gly Ile Pro Gly Ser Leu Leu Glu Leu Arg His His  
           35                          40                          45

Pro Arg Ser Asn Glu Ser Glu Ser Ala Cys  
           50                          55

<210> 439  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<400> 439  
 Trp Arg Arg Gln Ala Arg Val Glu Ser Leu Leu Pro Met Leu  
           1                          5                          10

<210> 440  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 440  
 Met Trp Asp Leu Ser Pro Ser Thr Leu Ser Leu Leu Leu Leu Ser  
           1                          5                          10                          15

Pro Cys Asp Val Pro Ala Leu Ala Leu Pro Ser Ala Met Ser Lys Ser  
                           20                          25                          30

Leu Leu Ser Leu Leu Arg Ser Arg Cys Cys His Ala Ser Trp Thr Ala  
           35                          40                          45

Cys Arg Thr Val Asn Gln Leu Asn Leu Phe Ser Leu  
           50                          55                          60

<210> 441  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

<400> 441  
 Pro Cys Asp Val His Phe  
 1 5

<210> 442  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 442  
 Met Trp Asp Leu Ser Pro Ser Thr Leu Ser Leu Leu Leu Leu Ser  
 1 5 10 15  
 Pro Cys Asp Val Pro Ala Leu Ala Leu Pro Ser Ala Met Ser Lys Ser  
 20 25 30  
 Leu Leu Ser Leu Leu Arg Ser Arg Cys Cys His Ala Ser Trp Thr Ala  
 35 40 45  
 Cys Arg Thr Val Asn Gln Leu Asn Leu Phe Ser Leu  
 50 55 60

<210> 443  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 443  
 Met Val Glu His Leu His Leu Thr Tyr His Tyr Leu Lys Leu Pro Cys  
 1 5 10 15  
 Ile Phe Ala Cys Leu Leu Leu Tyr Trp Phe Ser Pro Leu Leu Asn Ser  
 20 25 30  
 Lys Leu Gln Asp Ser Arg Asp Leu Val Cys Phe Leu Asn Gln Trp His  
 35 40 45  
 Thr Val Cys Ala  
 50

<210> 444  
 <211> 8  
 <212> PRT  
 <213> Homo sapiens

<400> 444  
 Pro Cys Cys Phe Leu Cys Leu Val  
 1 5

<210> 445  
 <211> 87  
 <212> PRT  
 <213> Homo sapiens

<400> 445  
 Pro Cys Cys Phe Leu Cys Leu Val Cys Ser Ser Ser Asp Ser His Lys  
           1                  5                  10                  15  
 Ala Ser Ser Ser Ser Ser Pro Thr Leu Ser Thr Pro Leu Pro Cys Leu  
                   20                  25                  30  
 Phe Ser Ser His Thr Ser Leu Leu Arg Asn Phe His Ile Ala Ser Leu  
           35                  40                  45  
 Leu Leu Thr Pro Pro Gln Ala Pro Gln Gly Trp Ala Phe Pro Ala Ser  
           50                  55                  60  
 Leu Thr Ala Ala Ala Leu Val Pro Gly Pro Val Pro Gly Thr Gln Leu  
           65                  70                  75                  80  
 Val Ala Arg Met Leu Ile Thr  
                   85

<210> 446  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 446  
 Met Val Glu His Leu His Leu Thr Tyr His Tyr Leu Lys Leu Pro Cys  
           1                  5                  10                  15  
 Ile Phe Ala Cys Leu Leu Leu Tyr Trp Phe Ser Pro Leu Leu Asn Ser  
                   20                  25                  30  
 Lys Leu Gln Asp Ser Arg Asp Leu Val Cys Phe Leu Asn Gln Trp His  
           35                  40                  45  
 Thr Val Cys Ala  
           50

<210> 447  
 <211> 31  
 <212> PRT  
 <213> Homo sapiens

<400> 447  
 Met Pro Leu Ser Arg Phe Trp Leu Leu Leu Leu Phe Leu Pro Ser His  
           1                  5                  10                  15  
 Ile Ser Val Leu Ser Leu Ile Arg Tyr Pro Ser Val Lys Glu Tyr  
                   20                  25                  30

<210> 448  
 <211> 31  
 <212> PRT  
 <213> Homo sapiens

<400> 448  
 Met Pro Leu Ser Arg Phe Trp Leu Leu Leu Leu Phe Leu Pro Ser His  
           1                  5                  10                  15  
 Ile Ser Val Leu Ser Leu Ile Arg Tyr Pro Ser Val Lys Glu Tyr  
                   20                  25                  30

<210> 449  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 449  
 Val Gly Ala Ser Thr Ala His Gly Leu Leu Leu Pro Leu Leu His Ile  
           1                  5                  10                  15  
 His Gly Gly Ser Ala Asn Ser Ser Ala Pro His His Pro Asn Pro Trp  
                   20                  25                  30  
 Pro Gln Ala Asp Arg Ala Trp Ser His Tyr Leu  
           35                  40

<210> 450  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 450  
 Val Gly Ala Ser Thr Ala His Gly Leu Leu Leu Pro Leu Leu His Ile  
           1                  5                  10                  15  
 His Gly Gly Ser Ala Asn Ser Ser Ala Pro His His Pro Asn Pro Trp  
                   20                  25                  30  
 Pro Gln Ala Asp Arg Ala Trp Ser His Tyr Leu  
           35                  40

<210> 451  
 <211> 26  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (9)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 451

Gln Phe Lys Gln Tyr Arg Tyr Ala Xaa Gly Met Leu Arg Gly Pro His  
 1 5 10 15

Ile Pro Val Ser Tyr Pro Asn Met Tyr Phe  
 20 25

&lt;210&gt; 452

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (58)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (62)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 452

Met His Phe Ala Ala Pro Phe Gln Leu Gln Ser Gln Thr Phe Arg Tyr  
 1 5 10 15

Glu Val Gly Ser Val Arg Lys Ser Gln Gln Val Leu Lys Ala Val Val  
 20 25 30

Thr Ala Leu Leu Ile Pro Ala Phe Ser Ser Leu Ser Ser Lys Ala Cys  
 35 40 45

Lys Ala Ser Phe Gly Lys Lys Lys Lys Xaa Lys Gly Lys Xaa  
 50 55 60

&lt;210&gt; 453

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (37)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (40)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (47)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 453

Glu Gln Leu Leu Glu Ser Ser Leu Ser Ser Thr Ser Cys Glu Thr Leu  
 1 5 10 15

Ser Ser Tyr Ala Ser Gly Arg Trp Leu Leu Ser Pro His Thr Pro Ala  
 20 25 30

Cys Arg Val Arg Xaa Tyr Ile Xaa Gly Thr Asp Arg Met Trp Xaa Pro  
 35 40 45

Arg Ser Met Pro Ser Ala Thr Asp Ile Ala  
 50 55

&lt;210&gt; 454

&lt;211&gt; 64

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 454

Met Ser Ala Thr His Pro Val Pro Trp Ser Val Thr Thr Trp Cys Phe  
 1 5 10 15

Phe Cys Thr Trp Asn Ala Thr Cys Ser Ala Gly Pro Ser Pro Gly His  
 20 25 30

Arg Val Ser Ser Ser Thr Ala Ser Phe Ile Arg Val Ser Tyr Phe Pro  
 35 40 45

Ser Tyr Phe Ser Ser Pro Leu Ser Val Thr Cys Val Pro Val Ser Ser  
 50 55 60

&lt;210&gt; 455

&lt;211&gt; 318

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 455

Glu Ala Lys Ala Gln Phe Trp Leu Leu His Ser Tyr Leu Phe Cys His  
 1 5 10 15

Ser Ser Asn Val Pro Asp Leu Leu Arg Pro Arg Met Thr Asn Asp Ser  
 20 25 30

Glu Gly Lys Met Gly Phe Lys His Pro Lys Ile Met Gly Asn Phe Arg  
 35 40 45

Gly His Ala Leu Pro Gly Thr Phe Phe Phe Ile Ile Gly Leu Trp Trp  
 50 55 60

Cys Thr Lys Ser Ile Leu Lys Tyr Ile Cys Lys Lys Gln Lys Arg Thr  
 65 70 75 80

Cys Tyr Leu Gly Ser Lys Thr Leu Phe Tyr Arg Leu Glu Ile Leu Glu

	85		90		95
Gly Ile Thr	Ile Val Gly Met Ala Leu Thr Gly Met Ala Gly Glu Gln				
	100		105		110
Phe Ile Pro Gly Gly Pro His Leu Met Leu Tyr Asp Tyr Lys Gln Gly					
	115		120		125
His Trp Asn Gln Leu Leu Gly Trp His His Phe Thr Met Tyr Phe Phe					
	130		135		140
Phe Gly Leu Leu Gly Val Ala Asp Ile Leu Cys Phe Thr Ile Ser Ser					
	145		150		155
Leu Pro Val Ser Leu Thr Lys Leu Met Leu Ser Asn Ala Leu Phe Val					
	165		170		175
Glu Ala Phe Ile Phe Tyr Asn His Thr His Gly Arg Glu Met Leu Asp					
	180		185		190
Ile Phe Val His Gln Leu Leu Val Leu Val Val Phe Leu Thr Gly Leu					
	195		200		205
Val Ala Phe Leu Glu Phe Leu Val Arg Asn Asn Val Leu Leu Glu Leu					
	210		215		220
Leu Arg Ser Ser Leu Ile Leu Leu Gln Gly Ser Trp Phe Phe Gln Ile					
	225		230		235
Gly Phe Val Leu Tyr Pro Pro Ser Gly Gly Pro Ala Trp Asp Leu Met					
	245		250		255
Asp His Glu Asn Ile Leu Phe Leu Thr Ile Cys Phe Cys Trp His Tyr					
	260		265		270
Ala Val Thr Ile Val Ile Val Gly Met Asn Tyr Ala Phe Ile Thr Trp					
	275		280		285
Leu Val Lys Ser Arg Leu Lys Arg Leu Cys Ser Ser Glu Val Gly Leu					
	290		295		300
Leu Lys Asn Ala Glu Arg Glu Gln Glu Ser Glu Glu Glu Met					
	305		310		315

&lt;210&gt; 456

&lt;211&gt; 24

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (2)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 456

Leu Xaa Lys Leu Lys Met Phe Tyr Lys Phe Ala Phe Lys Phe Ser Tyr
1 5 10 15

Glu Ala Ile Cys Lys Leu His Thr  
20

<210> 457  
<211> 19  
<212> PRT  
<213> Homo sapiens

<400> 457  
Met Val Ser Ile Leu Tyr Leu Gly Leu Phe Phe Leu Asn Ser Ser Val  
1 5 10 15

Leu Tyr Ala

<210> 458  
<211> 282  
<212> PRT  
<213> Homo sapiens

<400> 458  
Val Asn Arg Pro Ser Trp Ile Met Gly Asn Phe Arg Gly His Ala Leu  
1 5 10 15

Pro Gly Thr Phe Phe Phe Ile Ile Gly Leu Trp Trp Cys Thr Lys Ser  
20 25 30

Ile Leu Lys Tyr Ile Cys Lys Lys Gln Lys Arg Thr Cys Tyr Leu Gly  
35 40 45

Ser Lys Thr Leu Phe Tyr Arg Leu Glu Ile Leu Glu Gly Ile Thr Ile  
50 55 60

Val Gly Met Ala Leu Thr Gly Met Ala Gly Glu Gln Phe Ile Pro Gly  
65 70 75 80

Gly Pro His Leu Met Leu Tyr Asp Tyr Lys Gln Gly His Trp Asn Gln  
85 90 95

Leu Leu Gly Trp His His Phe Thr Met Tyr Phe Phe Phe Gly Leu Leu  
100 105 110

Gly Val Ala Asp Ile Leu Cys Phe Thr Ile Ser Ser Leu Pro Val Ser  
115 120 125

Leu Thr Lys Leu Met Leu Ser Asn Ala Leu Phe Val Glu Ala Phe Ile  
130 135 140

Phe Tyr Asn His Thr His Gly Arg Glu Met Leu Asp Ile Phe Val His  
145 150 155 160

Gln Leu Leu Val Leu Val Val Phe Leu Thr Gly Leu Val Ala Phe Leu  
165 170 175

Glu Phe Leu Val Arg Asn Asn Val Leu Leu Glu Leu Leu Arg Ser Ser  
180 185 190



Leu Ile Leu Leu Gln Gly Ser Trp Phe Phe Gln Ile Gly Phe Val Leu  
 195 200 205  
 Tyr Pro Pro Ser Gly Gly Pro Ala Trp Asp Leu Met Asp His Glu Asn  
 210 215 220  
 Ile Leu Phe Leu Thr Ile Cys Phe Cys Trp His Tyr Ala Val Thr Ile  
 225 230 235 240  
 Val Ile Val Gly Met Asn Tyr Ala Phe Ile Thr Trp Leu Val Lys Ser  
 245 250 255  
 Arg Leu Lys Arg Leu Cys Ser Ser Glu Val Gly Leu Leu Lys Asn Ala  
 260 265 270  
 Glu Arg Glu Gln Glu Ser Glu Glu Glu Met  
 275 280

<210> 459  
 <211> 19  
 <212> PRT  
 <213> Homo sapiens

<400> 459  
 Met Val Ser Ile Leu Tyr Leu Gly Leu Phe Phe Leu Asn Ser Ser Val  
 1 5 10 15  
 Leu Tyr Ala

<210> 460  
 <211> 47  
 <212> PRT  
 <213> Homo sapiens

<400> 460  
 Met Arg Val Gln Glu Leu Leu Leu Phe Leu Val Gly Gly Gly Val Thr  
 1 5 10 15  
 Glu Gly Cys Thr Glu Glu Val Thr Pro Leu Cys Leu Phe Leu Ala Asn  
 20 25 30  
 Asn Glu Val Leu Arg Thr Leu Thr Cys Arg Gln Ser Leu Ala Gln  
 35 40 45

<210> 461  
 <211> 136  
 <212> PRT  
 <213> Homo sapiens

<400> 461  
 Ser Ala Gln Ala Leu His His Pro Pro His Gln Gly Pro Pro Leu Phe  
 1 5 10 15

Pro Ser Ser Ala His Pro Thr Val Pro Pro Tyr Pro Ser Gln Ala Thr  
                   20                                  25                                  30  
 His His Thr Thr Leu Gly Pro Gly Pro Gln His Gln Pro Ser Gly Thr  
                   35                                  40                                  45  
 Gly Pro His Cys Pro Leu Pro Val Thr Gly Pro His Leu Gln Pro Gln  
           50                                  55                                  60  
 Gly Pro Asn Ser Ile Pro Thr Pro Thr Ala Ser Gly Phe Cys Pro His  
   65                                  70                                  75                                  80  
 Pro Gly Ser Val Ala Leu Pro Trp Gly Phe Lys Asp Leu Ser Arg His  
                   85                                  90                                  95  
 Leu Gln Cys Leu Asp Arg Phe Gln Phe Thr Glu His Arg Cys His Gln  
                  100                                 105                                 110  
 His Phe Lys Thr Ile Thr Met Gly Gln Gly Gly Ile Lys Met Asp Ser  
                  115                                 120                                 125  
 Lys Asn Ile Phe Leu Asn Val Leu  
          130                                 135

&lt;210&gt; 462

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (52)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 462

Met Ala Val Phe Leu Ile Ser Ser Ser Tyr Phe Leu Leu Cys Val Phe  
   1                  5                                  10                                  15  
 Thr Ile Arg Ser Leu Arg Ala Trp Val Leu Pro Phe Thr Ser Val Pro  
                   20                                  25                                  30  
 Arg Ala Gln Gly Gly Ser Cys Cys Arg Ser Gln Trp Leu Tyr Lys Thr  
                   35                                  40                                  45  
 Leu Pro Pro Xaa Leu Val Cys Lys Pro Val  
           50                                  55

&lt;210&gt; 463

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 463

Met Ala Val Phe Leu Ile Ser Ser Ser Tyr Phe Leu Leu Cys Val Phe  
   1                  5                                  10                                  15

Thr Ile Arg Ser Leu Arg Ala Trp Val Leu Pro Phe Thr Ser Val Pro  
20 25 30

Arg Ala Gln Gly Gly Ser Cys Cys Arg Ser Gln Trp Leu Tyr Lys Thr  
35 40 45

Leu Pro Pro Cys Leu Val Cys Lys Pro Val  
50 55

```
<210> 464
<211> 58
<212> PRT
<213> Homo sapiens
```

```
<220>
<221> SITE
<222> (52)
<223> Xaa equals any of the naturally occurring L-amino acids
```

```
<400> 464
Met Ala Val Phe Leu Ile Ser Ser Ser Tyr Phe Leu Leu Cys Val Phe
  1             5             10             15
```

Thr Ile Arg Ser Leu Arg Ala Trp Val Leu Pro Phe Thr Ser Val Pro  
20 25 30

Arg Ala Gln Gly Gly Ser Cys Cys Arg Ser Gln Trp Leu Tyr Lys Thr  
35 40 45

Leu Pro Pro Xaa Leu Val Cys Lys Pro Val  
50 55

```
<210> 465
<211> 58
<212> PRT
<213> Homo sapiens
```

```

<220>
<221> SITE
<222> (19)
<223> Xaa equals any of the naturally occurring L-amino acids

```

```

<220>
<221> SITE
<222> (25)
<223> Xaa equals any of the naturally occurring L-amino acids

```

```

<220>
<221> SITE
<222> (28)
<223> Xaa equals any of the naturally occurring L-amino acids

```

<220>  
<221> SITE  
<222> (46)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 465

```

Ser Arg Cys Ala Gly Ala Pro Leu Gln Asn Asn Gly Pro Val Arg Glu
 1           5           10           15
Ala Thr Xaa Leu Thr Leu Gln Asn Xaa Gly Pro Xaa Arg Glu Ala Thr
           20           25           30
His Leu Thr Leu Gln Asn Asn Gly Pro Met Arg Glu Ala Xaa His Leu
           35           40           45
Val Leu His Lys Trp Ser Ile Cys Leu Arg
           50           55

```

<210> 466

<211> 27

<212> PRT

<213> Homo sapiens

<400> 466

```

Met Pro Tyr Gly Pro Asp Pro Ile Leu Ser Asn Val Leu Leu Ala Gly
 1           5           10           15
Tyr Ile Val Leu Gln Thr Leu Ser Cys Pro Arg
           20           25

```

<210> 467

<211> 139

<212> PRT

<213> Homo sapiens

<400> 467

```

Met Val Thr Val Gly Leu Val Ile Cys Phe Ser Glu Trp Cys Cys Ala
 1           5           10           15
Gly Gly Leu Ser Ala Glu Gln Thr Val Ser Asp Lys His Ile Asp Ala
           20           25           30
Leu Met Lys Glu Lys Glu Ala Gly Lys Ser Ser Gly His Tyr Asp Pro
           35           40           45
Arg His Gln Gly Gln Ala Leu Glu Glu Pro Ser Val His Ser Cys Ile
           50           55           60
Tyr Tyr Leu Leu Thr Glu Gln Thr Gln Lys Val Ser Thr Arg Thr Ser
           65           70           75           80
Leu Leu Arg Tyr Arg Trp Pro Cys Glu Glu Val Gly Trp Cys Trp Gly
           85           90           95
Leu Asp Leu Thr Gly Cys Pro Val Val Ile Gln His Glu Gly Val Ala
           100          105          110
Gly Ser Glu Ile Ile Ile Ser Asp Tyr Pro Leu Thr Asn Glu Asn Ile
           115          120          125

```

Lys Gly Ile Pro Glu Ile Cys Leu Phe His Ile  
 130 135

<210> 468  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 468  
 Met Leu Ala Ile Lys Val Leu Ile Val Val Phe Leu Leu Gln Leu Ser  
 1 5 10 15  
 Trp Cys Phe Leu Leu Val Leu Leu Phe His Ser Leu Ile Lys Gly Thr  
 20 25 30

Met Ile Asp Ile Pro Ala Pro Tyr Lys Glu Ile  
 35 40

<210> 469  
 <211> 38  
 <212> PRT  
 <213> Homo sapiens

<400> 469  
 Cys Phe Leu Leu Ala Asp Val Gly Asn Ser Ile Ile Phe Ile Thr Asn  
 1 5 10 15  
 Phe Met Glu Gln His Gln Phe Arg Val Lys Leu Glu Asn Gln Cys Ile  
 20 25 30

Leu Ile Phe Val Asp Tyr  
 35

<210> 470  
 <211> 4  
 <212> PRT  
 <213> Homo sapiens

<400> 470  
 Val Gly Phe Leu  
 1

<210> 471  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens

<400> 471  
 Ala Pro Arg Arg Gln Ala Gln Glu Trp Leu Gly Arg Thr Gly Asn Thr  
 1 5 10 15

Phe Ala Pro Arg Leu Ala Val Thr Ser Val Lys Ala Asp Arg Arg Glu  
                   20                  25                  30  
 Met Gly Pro Ser Ser Ser Val Val Ala Ala Ser Pro Ser Leu Gln Asp  
                   35                  40                  45  
 Arg Val Ile Ile Thr Ile Asn Asn Pro Ser Arg Val Lys Lys Lys Lys  
           50                  55                  60  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
   65                  70                  75

<210> 472  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 472  
 Ala Trp Arg Arg Arg Arg Ser Gly Thr Ser Gly Lys Ala Thr Trp Trp  
   1                  5                  10                  15  
 Cys Ser Gly Leu Arg Arg Ala Ser Pro Thr Pro Ser Arg Arg Val Gln  
                   20                  25                  30  
 Ser Trp Ala Thr Ala Val Met Trp Lys Pro Ser Pro Ser Ser Ser Pro  
           35                  40                  45  
 Ala Ser Trp Ser Cys Thr Ala Leu Arg Ala Pro Gln Ser Cys Leu Arg  
           50                  55                  60  
 Ala Ala Thr Val Arg Pro Val Thr Leu Gln Ala Arg Ala Asp Ser Pro  
   65                  70                  75                  80  
 Thr Val Pro Glu Pro Val His Arg Pro Gln Asp Pro Trp His Ile Pro  
                   85                  90                  95  
 Gly Val Pro Glu Pro Val His Arg Pro Gln Asp Pro Trp His Ile Pro  
           100                  105                  110  
 Gly Val Pro Glu Pro Val His Arg Pro Gln Asp Pro Trp His Ile Pro  
           115                  120                  125  
 Gly Val Pro Glu Pro Val His Arg Pro Gln Asp Pro Trp Pro Trp Leu  
   130                  135                  140  
 Gln Leu Val Pro Pro Ala Glu Leu Ala Tyr Cys Leu Leu Met Leu Leu  
  145                  150                  155                  160  
 Leu Ala His Cys Met Lys Gln Gln Ala Arg Pro Gly His Pro Asp Phe  
                   165                  170                  175  
 Leu His Arg Glu Ala Trp Ala Cys Leu Ser Ala Ala Gly Gly Leu Ala  
           180                  185                  190  
 Ser Pro Gly Leu Leu Leu Trp Ala Thr Ala Arg Pro Arg Ala Ser Gly  
           195                  200                  205  
 Glu Ala Gly Pro Gly Arg Ala Leu Val Gly Ala Asp Ala Ala Cys Cys

210 215 220  
 Pro Arg His Ser Val Leu Ser Leu Val Asp Ile Pro Ser Gly Gln Val  
 225 230 235 240  
 Leu Pro Gln Gly Gln  
 245

<210> 473  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 473  
 Met Ala Ala Arg Gly Arg Ser Gly Val Gly Pro Pro Gly Phe Leu Arg  
 1 5 10 15  
 Ala Leu Ala Leu Leu Gln Leu Ser Cys Gly Phe Tyr Trp Ala Cys Ser  
 20 25 30  
 Arg Gly Trp Met Val Arg Gly Thr Pro His Pro  
 35 40

<210> 474  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 474  
 Met Ala Ala Arg Gly Arg Ser Gly Val Gly Pro Pro Gly Phe Leu Arg  
 1 5 10 15  
 Ala Leu Ala Leu Leu Gln Leu Ser Cys Gly Phe Tyr Trp Ala Cys Ser  
 20 25 30  
 Arg Gly Trp Met Val Arg Gly Thr Pro His Pro  
 35 40

<210> 475  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 475  
 Met Phe Asn Leu Ser Phe Phe Thr Leu Tyr Gly Leu Cys Met Leu Lys  
 1 5 10 15  
 Leu His Ser Ala Ser Ser Trp Phe Thr Leu Leu Leu Ile Ser Leu  
 20 25 30  
 Phe Leu Ser Val Val Tyr Cys Gln Ser Thr Asn  
 35 40

<210> 476  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 476  
 Leu His  
 1

<210> 477  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 477  
 Met Phe Asn Leu Ser Phe Phe Thr Leu Tyr Gly Leu Cys Met Leu Lys  
 1 5 10 15  
 Leu His Ser Ala Ser Ser Trp Phe Thr Leu Leu Leu Leu Ile Ser Leu  
 20 25 30  
 Phe Leu Ser Val Val Tyr Cys Gln Ser Thr Asn  
 35 40

<210> 478  
 <211> 47  
 <212> PRT  
 <213> Homo sapiens

<400> 478  
 Met Ser Leu Leu Leu Pro Pro Leu Ala Leu Leu Leu Leu Leu Ala Ala  
 1 5 10 15  
 Leu Val Ala Pro Ala Thr Ala Ala Thr Ala Tyr Arg Pro Asp Trp Asn  
 20 25 30  
 Arg Leu Ser Gly Leu Thr Arg Ala Arg Val Glu Thr Cys Gly Gly  
 35 40 45

<210> 479  
 <211> 47  
 <212> PRT  
 <213> Homo sapiens

<400> 479  
 Met Ser Leu Leu Leu Pro Pro Leu Ala Leu Leu Leu Leu Leu Ala Ala  
 1 5 10 15  
 Leu Val Ala Pro Ala Thr Ala Ala Thr Ala Tyr Arg Pro Asp Trp Asn  
 20 25 30  
 Arg Leu Ser Gly Leu Thr Arg Ala Arg Val Glu Thr Cys Gly Gly  
 35 40 45



<210> 480  
 <211> 365  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (313)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (316)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (333)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (335)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (338)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (339)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (352)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (355)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 480  
 Met Leu Ser Gly Val Trp Phe Leu Ser Val Leu Thr Val Ala Gly Ile  
     1                    5                    10                    15

Leu Gln Thr Glu Ser Arg Lys Thr Ala Lys Asp Ile Cys Lys Ile Arg  
                     20                    25                    30

Cys Leu Cys Glu Glu Lys Glu Asn Val Leu Asn Ile Asn Cys Glu Asn  
                     35                    40                    45

Lys Gly Phe Thr Thr Val Ser Leu Leu Gln Pro Pro Gln Tyr Arg Ile  
                     50                    55                    60

Tyr Gln Leu Phe Leu Asn Gly Asn Leu Leu Thr Arg Leu Tyr Pro Asn  
 65 70 75 80  
 Glu Phe Val Asn Tyr Ser Asn Ala Val Thr Leu His Leu Gly Asn Asn  
 85 90 95  
 Gly Leu Gln Glu Ile Arg Thr Gly Ala Phe Ser Gly Leu Lys Thr Leu  
 100 105 110  
 Lys Arg Leu His Leu Asn Asn Asn Lys Leu Glu Ile Leu Arg Glu Asp  
 115 120 125  
 Thr Phe Leu Gly Leu Glu Ser Leu Glu Tyr Leu Gln Ala Asp Tyr Asn  
 130 135 140  
 Tyr Ile Ser Ala Ile Glu Ala Gly Ala Phe Ser Lys Leu Asn Lys Leu  
 145 150 155 160  
 Lys Val Leu Ile Leu Asn Asp Asn Leu Leu Leu Ser Leu Pro Ser Asn  
 165 170 175  
 Val Phe Arg Phe Val Leu Leu Thr His Leu Asp Leu Arg Gly Asn Arg  
 180 185 190  
 Leu Lys Val Met Pro Phe Ala Gly Val Leu Glu His Ile Gly Gly Ile  
 195 200 205  
 Met Glu Ile Gln Leu Glu Glu Asn Pro Trp Asn Cys Thr Cys Asp Leu  
 210 215 220  
 Leu Pro Leu Lys Ala Trp Leu Asp Thr Ile Thr Val Phe Val Gly Glu  
 225 230 235 240  
 Ile Val Cys Glu Thr Pro Phe Arg Leu His Gly Lys Asp Val Thr Gln  
 245 250 255  
 Leu Thr Arg Gln Asp Leu Cys Pro Arg Lys Ser Ala Ser Asp Ser Ser  
 260 265 270  
 Gln Arg Gly Ser His Ala Asp Thr His Val Gln Arg Leu Ser Pro Thr  
 275 280 285  
 Met Asn Pro Ala Leu Asn Pro Thr Arg Ala Pro Lys Ala Ser Arg Pro  
 290 295 300  
 Pro Lys Met Arg Asn Arg Pro Thr Xaa Arg Val Xaa Val Ser Lys Asp  
 305 310 315 320  
 Arg Gln Ser Phe Gly Pro Ile Met Val Tyr Gln Thr Xaa Val Xaa Cys  
 325 330 335  
 Ala Xaa Xaa Leu Ser Gln Gln Leu Cys Leu His Leu Ser Glu Leu Xaa  
 340 345 350  
 Gln Trp Xaa Glu Cys Lys Leu Pro Arg Lys Glu Val His  
 355 360 365

<210> 481  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 481  
 Gly Tyr Trp Val Ser Phe Leu Leu His Val Asp Gly Val Leu Ala His  
     1                    5                    10                    15  
 Leu Thr Thr Gly Gly Gly Ile  
                     20

<210> 482  
 <211> 191  
 <212> PRT  
 <213> Homo sapiens

<400> 482  
 Met Leu Ser Gly Val Trp Phe Leu Ser Val Leu Thr Val Ala Gly Ile  
     1                    5                    10                    15  
 Leu Gln Thr Glu Ser Arg Lys Thr Ala Lys Asp Ile Cys Lys Ile Arg  
                     20                    25                    30  
 Cys Leu Cys Glu Glu Lys Glu Asn Val Leu Asn Ile Asn Cys Glu Asn  
             35                    40                    45  
 Lys Gly Phe Thr Thr Val Ser Leu Leu Gln Pro Pro Gln Tyr Arg Ile  
     50                    55                    60  
 Tyr Gln Leu Phe Leu Asn Gly Asn Leu Leu Thr Arg Leu Tyr Pro Asn  
     65                    70                    75                    80  
 Glu Phe Val Asn Tyr Ser Asn Ala Val Thr Leu His Leu Gly Asn Asn  
                     85                    90                    95  
 Gly Leu Gln Glu Ile Arg Thr Gly Ala Phe Ser Gly Leu Lys Thr Leu  
             100                    105                    110  
 Lys Arg Leu His Leu Asn Asn Asn Lys Leu Glu Ile Leu Arg Glu Asp  
     115                    120                    125  
 Thr Phe Leu Gly Leu Glu Ser Leu Glu Tyr Leu Gln Ala Asp Tyr Asn  
     130                    135                    140  
 Tyr Ile Ser Ala Ile Glu Ala Gly Ala Phe Ser Lys Leu Asn Lys Leu  
     145                    150                    155                    160  
 Lys Val Leu Ile Leu Asn Asp Asn Leu Leu Leu Ser Leu Pro Ser Asn  
                     165                    170                    175  
 Val Phe Arg Phe Val Leu Leu Thr His Leu Asp Leu Arg Gly Asn  
             180                    185                    190

<210> 483  
 <211> 845

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (477)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 483

Met	Leu	Ser	Gly	Val	Trp	Phe	Leu	Ser	Val	Leu	Thr	Val	Ala	Gly	Ile
1				5					10					15	

Leu	Gln	Thr	Glu	Ser	Arg	Lys	Thr	Ala	Lys	Asp	Ile	Cys	Lys	Ile	Arg
			20					25					30		

Cys	Leu	Cys	Glu	Glu	Lys	Glu	Asn	Val	Leu	Asn	Ile	Asn	Cys	Glu	Asn
	35						40					45			

Lys	Gly	Phe	Thr	Thr	Val	Ser	Leu	Leu	Gln	Pro	Pro	Gln	Tyr	Arg	Ile
	50					55					60				

Tyr	Gln	Leu	Phe	Leu	Asn	Gly	Asn	Leu	Leu	Thr	Arg	Leu	Tyr	Pro	Asn
65					70					75					80

Glu	Phe	Val	Asn	Tyr	Ser	Asn	Ala	Val	Thr	Leu	His	Leu	Gly	Asn	Asn
			85						90					95	

Gly	Leu	Gln	Glu	Ile	Arg	Thr	Gly	Ala	Phe	Ser	Gly	Leu	Lys	Thr	Leu
		100						105					110		

Lys	Arg	Leu	His	Leu	Asn	Asn	Asn	Lys	Leu	Glu	Ile	Leu	Arg	Glu	Asp
	115						120					125			

Thr	Phe	Leu	Gly	Leu	Glu	Ser	Leu	Glu	Tyr	Leu	Gln	Ala	Asp	Tyr	Asn
	130					135					140				

Tyr	Ile	Ser	Ala	Ile	Glu	Ala	Gly	Ala	Phe	Ser	Lys	Leu	Asn	Lys	Leu
145					150					155					160

Lys	Val	Leu	Ile	Leu	Asn	Asp	Asn	Leu	Leu	Leu	Ser	Leu	Pro	Ser	Asn
			165					170						175	

Val	Phe	Arg	Phe	Val	Leu	Leu	Thr	His	Leu	Asp	Leu	Arg	Gly	Asn	Arg
		180						185					190		

Leu	Lys	Val	Met	Pro	Phe	Ala	Gly	Val	Leu	Glu	His	Ile	Gly	Gly	Ile
	195						200					205			

Met	Glu	Ile	Gln	Leu	Glu	Glu	Asn	Pro	Trp	Asn	Cys	Thr	Cys	Asp	Leu
	210					215					220				

Leu	Pro	Leu	Lys	Ala	Trp	Leu	Asp	Thr	Ile	Thr	Val	Phe	Val	Gly	Glu
225					230					235					240

Ile	Val	Cys	Glu	Thr	Pro	Phe	Arg	Leu	His	Gly	Lys	Asp	Val	Thr	Gln
			245					250						255	

Leu	Thr	Arg	Gln	Asp	Leu	Cys	Pro	Arg	Lys	Ser	Ala	Ser	Asp	Ser	Ser
			260					265					270		

Gln Arg Gly Ser His Ala Asp Thr His Val Gln Arg Leu Ser Pro Thr  
 275 280 285  
 Met Asn Pro Ala Leu Asn Pro Thr Arg Ala Pro Lys Ala Ser Arg Pro  
 290 295 300  
 Pro Lys Met Arg Asn Arg Pro Thr Pro Arg Val Thr Val Ser Lys Asp  
 305 310 315 320  
 Arg Gln Ser Phe Gly Pro Ile Met Val Tyr Gln Thr Lys Ser Pro Val  
 325 330 335  
 Pro Leu Thr Cys Pro Ser Ser Cys Val Cys Thr Ser Gln Ser Ser Asp  
 340 345 350  
 Asn Gly Leu Asn Val Asn Cys Gln Glu Arg Lys Phe Thr Asn Ile Ser  
 355 360 365  
 Asp Leu Gln Pro Lys Pro Thr Ser Pro Lys Lys Leu Tyr Leu Thr Gly  
 370 375 380  
 Asn Tyr Leu Gln Thr Val Tyr Lys Asn Asp Leu Leu Glu Tyr Ser Ser  
 385 390 395 400  
 Leu Asp Leu Leu His Leu Gly Asn Asn Arg Ile Ala Val Ile Gln Glu  
 405 410 415  
 Gly Ala Phe Thr Asn Leu Thr Ser Leu Arg Arg Leu Tyr Leu Asn Gly  
 420 425 430  
 Asn Tyr Leu Glu Val Leu Tyr Pro Ser Met Phe Asp Gly Leu Gln Ser  
 435 440 445  
 Leu Gln Tyr Leu Tyr Leu Glu Tyr Asn Val Ile Lys Glu Ile Lys Pro  
 450 455 460  
 Leu Thr Phe Asp Ala Leu Ile Asn Leu Gln Leu Leu Xaa Leu Asn Asn  
 465 470 475 480  
 Asn Leu Leu Arg Ser Leu Pro Asp Asn Ile Phe Gly Gly Thr Ala Leu  
 485 490 495  
 Thr Arg Leu Asn Leu Arg Asn Asn His Phe Ser His Leu Pro Val Lys  
 500 505 510  
 Gly Val Leu Asp Gln Leu Pro Ala Phe Ile Gln Ile Asp Leu Gln Glu  
 515 520 525  
 Asn Pro Trp Asp Cys Thr Cys Asp Ile Met Gly Leu Lys Asp Trp Thr  
 530 535 540  
 Glu His Ala Asn Ser Pro Val Ile Ile Asn Glu Val Thr Cys Glu Ser  
 545 550 555 560  
 Pro Ala Lys His Ala Gly Glu Ile Leu Lys Phe Leu Gly Arg Glu Ala  
 565 570 575  
 Ile Cys Pro Asp Ser Pro Asn Leu Ser Asp Gly Thr Val Leu Ser Met  
 580 585 590

Asn His Asn Thr Asp Thr Pro Arg Ser Leu Ser Val Ser Pro Ser Ser  
 595 600 605  
 Tyr Pro Glu Leu His Thr Glu Val Pro Leu Ser Val Leu Ile Leu Gly  
 610 615 620  
 Leu Leu Val Val Phe Ile Leu Ser Val Cys Phe Gly Ala Gly Leu Phe  
 625 630 635 640  
 Val Phe Val Leu Lys Arg Arg Lys Gly Val Pro Ser Val Pro Arg Asn  
 645 650 655  
 Thr Asn Asn Leu Asp Val Ser Ser Phe Gln Leu Gln Tyr Gly Ser Tyr  
 660 665 670  
 Asn Thr Glu Thr His Asp Lys Thr Asp Gly His Val Tyr Asn Tyr Ile  
 675 680 685  
 Pro Pro Pro Val Gly Gln Met Cys Gln Asn Pro Ile Tyr Met Gln Lys  
 690 695 700  
 Glu Gly Asp Pro Val Ala Tyr Tyr Arg Asn Leu Gln Glu Phe Ser Tyr  
 705 710 715 720  
 Ser Asn Leu Glu Glu Lys Lys Glu Glu Pro Ala Thr Pro Ala Tyr Thr  
 725 730 735  
 Ile Ser Ala Thr Glu Leu Leu Glu Lys Gln Ala Thr Pro Arg Glu Pro  
 740 745 750  
 Glu Leu Leu Tyr Gln Asn Ile Ala Glu Arg Val Lys Glu Leu Pro Ser  
 755 760 765  
 Ala Gly Leu Val His Tyr Asn Phe Cys Thr Leu Pro Lys Arg Gln Phe  
 770 775 780  
 Ala Pro Ser Tyr Glu Ser Arg Arg Gln Asn Gln Asp Arg Ile Asn Lys  
 785 790 795 800  
 Thr Val Leu Tyr Gly Thr Pro Arg Lys Cys Phe Val Gly Gln Ser Lys  
 805 810 815  
 Pro Asn His Pro Leu Leu Gln Ala Lys Pro Gln Ser Glu Pro Asp Tyr  
 820 825 830  
 Leu Glu Val Leu Glu Lys Gln Thr Ala Ile Ser Gln Leu  
 835 840 845

&lt;210&gt; 484

&lt;211&gt; 141

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (125)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (131)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 484

Phe	Cys	Leu	Leu	His	Val	Pro	Ala	Ser	Cys	Tyr	Cys	Ser	Phe	Ser	Asn
1				5					10					15	

Gly	Ile	Thr	Ser	Pro	Cys	His	Ala	Leu	Gly	Ser	Pro	Ser	Leu	Ser	Ile
			20					25					30		

Ser	Val	Leu	Leu	Ser	Trp	Leu	Asn	Pro	Ser	Thr	Ile	Leu	Asn	Thr	Gly
		35					40						45		

Ser	Ser	Cys	Pro	Ile	Pro	Arg	Leu	Thr	Leu	Ser	Asp	Leu	Pro	Ile	Ser
		50				55					60				

Leu	Ala	Phe	His	Ala	Pro	Leu	Pro	Pro	Pro	Pro	Gly	Phe	Asn	Trp	Val
65					70					75					80

Arg	Ala	Val	Phe	Leu	Pro	Leu	Cys	Ser	Ala	Ser	Ala	Leu	Arg	Thr	Pro
				85					90					95	

Arg	Gly	Leu	Gly	Gly	Lys	Val	Leu	Thr	Ile	Phe	Thr	Leu	Cys	Leu	Pro
		100						105					110		

Leu	His	His	Leu	Phe	Ile	Thr	Ser	Gln	Pro	Leu	Leu	Xaa	Gln	Val	Phe
		115					120					125			

Thr	His	Xaa	Leu	Phe	Leu	Gln	Val	Phe	Asp	Trp	Arg	Glu
	130					135					140	

&lt;210&gt; 485

&lt;211&gt; 8

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 485

Ser	His	Ile	Val	Thr	Cys	Leu	Gly
1						5	

&lt;210&gt; 486

&lt;211&gt; 42

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 486

Met	Gly	Leu	Lys	Asn	Ser	Ser	Leu	Ile	Thr	Cys	Phe	Leu	Leu	Ala	Phe
1					5				10					15	

Val	Val	Phe	Val	Leu	Phe	Cys	Leu	Phe	Cys	Phe	Val	Phe	Leu	Cys	Tyr
			20					25					30		

Phe	Ile	Gly	Lys	Val	Ser	Gly	Met	Cys	Ser
		35					40		

&lt;210&gt; 487

&lt;211&gt; 42

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 487

Met Gly Leu Lys Asn Ser Ser Leu Ile Thr Cys Phe Leu Leu Ala Phe  
 1 5 10 15

Val Val Phe Val Leu Phe Cys Leu Phe Cys Phe Val Phe Leu Cys Tyr  
 20 25 30

Phe Ile Gly Lys Val Ser Gly Met Cys Ser  
 35 40

&lt;210&gt; 488

&lt;211&gt; 27

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 488

Met Arg Arg Met Ala Ser Ala Leu Leu Leu Asp Gln Leu Thr Lys Ala  
 1 5 10 15

Leu Leu Ser Gly His Gln Asn Trp Lys Ala Phe  
 20 25

&lt;210&gt; 489

&lt;211&gt; 137

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (1)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (7)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (33)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 489

Xaa Arg Cys Phe Thr Phe Xaa Phe Thr Asp Ile Val Ile Met Pro Lys  
 1 5 10 15

Arg Lys Phe Pro Glu Asn Thr Glu Gly Lys Asp Gly Ser Lys Val Thr  
 20 25 30



Xaa	Gln	Glu	Pro	Thr	Arg	Arg	Ser	Ala	Arg	Leu	Ser	Ala	Lys	Pro	Ala
		35					40					45			
Pro	Pro	Lys	Pro	Glu	Pro	Lys	Pro	Arg	Lys	Thr	Ser	Ala	Lys	Lys	Glu
	50					55					60				
Pro	Gly	Ala	Lys	Ile	Ser	Arg	Gly	Ala	Lys	Gly	Lys	Lys	Glu	Glu	Lys
65					70					75					80
Gln	Glu	Ala	Gly	Lys	Glu	Gly	Thr	Ala	Pro	Ser	Glu	Asn	Gly	Glu	Thr
				85					90					95	
Lys	Ala	Glu	Glu	Ile	His	Ile	Ser	Arg	Ser	Thr	Val	Asn	Val	Ser	Thr
			100					105					110		
Ser	Arg	Gly	Thr	Pro	Pro	Ser	Thr	Leu	Ser	Val	Lys	Gly	Gln	Ile	Glu
		115					120					125			
Thr	Val	Arg	Val	Lys	Gly	Thr	Glu	Asn							
	130					135									

<210> 490

<211> 46

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (38)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 490

Asn Lys Pro Asp Thr Gly Arg Lys Ile Leu His Asp Leu Ile Cys Gly  
1 5 10 15

Ile Leu Lys Lys Lys Lys Lys Lys Ser Gln Ile Tyr Arg Val Asn Lys  
20 25 30

Arg Val Gly Tyr Gln Xaa Gln Val Gly Gly Glu Trp Glu Met  
35 40 45

<210> 491

<211> 50 .

<212> PRT

<213> Homo sapiens

$\langle 400 \rangle$  491

Met Gln Pro Pro Phe Val Leu Thr Thr Thr Thr Met Ile Ser Leu Phe  
1 5 10 15

Leu Ala Leu Ile Ser Thr Lys Lys Val His Leu Thr Ile Pro Gln Pro  
20 25 30

Phe Thr Ser His Ser Arg Leu Ser Phe Asp Val Phe Lys Arg Lys Ala  
35 40 45

Arg Ala  
50

<210> 492  
<211> 228  
<212> PRT  
<213> Homo sapiens

<400> 492  
Thr Gln Asp His Gln Lys Leu Cys Tyr Ser Ala Leu Ile Leu Ala Met  
1 5 10 15  
Val Phe Ser Met Gly Glu Ala Val Pro Tyr Ala His Tyr Glu His Leu  
20 25 30  
Gly Thr Pro Phe Ala Gln Phe Leu Leu Asn Ile Val Glu Asp Gly Leu  
35 40 45  
Pro Leu Asp Thr Thr Glu Gln Leu Pro Asp Leu Cys Val Asn Leu Leu  
50 55 60  
Leu Ala Leu Asn Leu His Leu Pro Ala Ala Asp Gln Asn Val Ile Met  
65 70 75 80  
Ala Ala Leu Ser Lys His Ala Asn Val Lys Ile Phe Ser Glu Lys Leu  
85 90 95  
Leu Leu Leu Leu Asn Arg Gly Asp Asp Pro Val Arg Ile Phe Lys His  
100 105 110  
Glu Pro Gln Pro Pro His Ser Val Leu Lys Phe Leu Gln Asp Val Phe  
115 120 125  
Gly Ser Pro Ala Thr Ala Ala Ile Phe Tyr His Thr Asp Met Met Ala  
130 135 140  
Leu Ile Asp Ile Thr Val Arg His Ile Ala Asp Leu Ser Pro Gly Asp  
145 150 155 160  
Lys Leu Arg Met Glu Tyr Leu Ser Leu Met His Ala Ile Val Arg Thr  
165 170 175  
Thr Pro Tyr Leu Gln His Arg His Arg Leu Pro Asp Leu Gln Ala Ile  
180 185 190  
Leu Arg Arg Ile Leu Asn Glu Glu Glu Thr Ser Pro Gln Cys Gln Met  
195 200 205  
Asp Arg Met Ile Val Arg Glu Met Cys Lys Glu Phe Leu Val Leu Gly  
210 215 220  
Glu Ala Pro Ser  
225

<210> 493

<211> 13  
 <212> PRT  
 <213> Homo sapiens

<400> 493  
 Pro Phe His Phe Ser Thr Pro Ser Ile Thr Gly Leu Phe  
           1                          5                          10

<210> 494  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 494  
 Phe Leu  
           1

<210> 495  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 495  
 Met Gln Pro Pro Phe Val Leu Thr Thr Thr Thr Met Ile Ser Leu Phe  
           1                          5                          10                          15

Leu Ala Leu Ile Ser Thr Lys Lys Val His Leu Thr Ile Pro Gln Pro  
                           20                          25                          30

Phe Thr Ser His Ser Arg Leu Ser Phe Asp Val Phe Lys Arg Lys Ala  
           35                          40                          45

Arg Ala  
           50

<210> 496  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<400> 496  
 Met Phe Ile Phe Ile Leu Met Ile His Leu Ile Tyr Met Trp Ile Gln  
           1                          5                          10                          15

Gly Thr Lys Phe Met Tyr Lys Ser Ser His Leu Met Asn Val Asp Thr  
                           20                          25                          30

Phe Leu Glu Asn Ile Tyr Gln Cys Glu Asn Phe Phe Asn Thr Leu Thr  
           35                          40                          45

Thr Lys Ile Lys Tyr Ser Leu Ile Ser Leu Phe Asn Lys His Gln Asn  
           50                          55                          60

Asn Val Ser Val Phe Ile Leu

65

70

<210> 497  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<400> 497  
 Leu Phe Ile Leu Val Leu His Asn Glu Asp Asn Leu Tyr Gly  
           1                          5                          10

<210> 498  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<400> 498  
 Met Phe Ile Phe Ile Leu Met Ile His Leu Ile Tyr Met Trp Ile Gln  
           1                          5                          10                          15  
 Gly Thr Lys Phe Met Tyr Lys Ser Ser His Leu Met Asn Val Asp Thr  
                           20                          25                          30  
 Phe Leu Glu Asn Ile Tyr Gln Cys Glu Asn Phe Phe Asn Thr Leu Thr  
                           35                          40                          45  
 Thr Lys Ile Lys Tyr Ser Leu Ile Ser Leu Phe Asn Lys His Gln Asn  
           50                          55                          60  
 Asn Val Ser Val Phe Ile Leu  
           65                          70

<210> 499  
 <211> 167  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (82)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (88)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (96)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE

&lt;222&gt; (106)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (111)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 499

Gly	Arg	Cys	Leu	Asp	Cys	Phe	Asn	Pro	Phe	Leu	Leu	Ser	Cys	Pro	Arg
1				5					10					15	

Ile	Gly	Leu	Val	Glu	Gln	Gly	Gly	Val	Lys	Ile	Glu	Pro	Leu	Pro	Lys
		20						25					30		

Glu	Val	Lys	Val	Tyr	Leu	Leu	Thr	Thr	Ser	Ser	Ala	Pro	Tyr	Cys	Met
	35						40					45			

His	His	Ser	Leu	Val	Glu	Phe	His	Leu	Lys	Glu	Leu	Arg	Asn	Lys	Asp
	50					55					60				

Thr	Asn	Ile	Glu	Val	Thr	Phe	Leu	Ser	Ser	Asn	Ile	Thr	Ser	Ser	Ser
65					70					75					80

Lys	Xaa	Thr	Ile	Pro	Lys	Gln	Xaa	Arg	Tyr	Gly	Glu	Arg	Asn	His	Xaa
				85					90					95	

Pro	Met	Pro	Thr	Pro	Gln	Cys	Gln	Ile	Xaa	Gln	Val	Lys	Phe	Xaa	Phe
			100					105					110		

Gln	Ser	Ser	Asn	Arg	Val	Trp	Lys	Lys	Asp	Arg	Thr	Thr	Ile	Ile	Gly
		115					120					125			

Lys	Phe	Cys	Thr	Ala	Leu	Leu	Pro	Val	Asn	Asp	Arg	Glu	Lys	Met	Val
	130					135					140				

Cys	Leu	Pro	Glu	Pro	Val	Asn	Leu	Gln	Ala	Ser	Val	Thr	Val	Ser	Cys
145					150					155					160

Asp	Leu	Lys	Ile	Ala	Cys	Val
					165	

&lt;210&gt; 500

&lt;211&gt; 1

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 500

Met

1

&lt;210&gt; 501

&lt;211&gt; 14

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 501

Thr Thr Glu Ile Cys Gly Thr Leu Ile Leu Arg Glu Met Ile  
 1 5 10

&lt;210&gt; 502

&lt;211&gt; 67

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 502

Met Ser Leu Phe Leu Thr Leu Ala Leu Cys Ser Val Leu Leu Val His  
 1 5 10 15

Leu Asn Val Leu Ala Arg Asn Cys Phe Tyr Asp Ser Gly Phe Val Val  
 20 25 30

His Pro Trp Ile Trp Leu Gly His Ser Leu Pro Tyr Phe Tyr Phe Ser  
 35 40 45

Pro Leu Ser Gln Arg Leu Phe Ser Tyr Leu Trp Thr Phe Ile Phe Pro  
 50 55 60

Cys Arg Leu  
 65

&lt;210&gt; 503

&lt;211&gt; 67

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 503

Met Ser Leu Phe Leu Thr Leu Ala Leu Cys Ser Val Leu Leu Val His  
 1 5 10 15

Leu Asn Val Leu Ala Arg Asn Cys Phe Tyr Asp Ser Gly Phe Val Val  
 20 25 30

His Pro Trp Ile Trp Leu Gly His Ser Leu Pro Tyr Phe Tyr Phe Ser  
 35 40 45

Pro Leu Ser Gln Arg Leu Phe Ser Tyr Leu Trp Thr Phe Ile Phe Pro  
 50 55 60

Cys Arg Leu  
 65

&lt;210&gt; 504

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 504

Leu Tyr Leu Phe Met  
 1 5

<210> 505  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<400> 505  
 Ile Ile Tyr Leu Leu Phe Val Thr Lys Trp Glu Ile Arg Lys Lys Val  
           1                  5                  10                  15  
 Arg Lys Tyr Leu Arg Gly Lys Ser Phe Leu Leu Ser His Val Phe Ser  
                   20                  25                  30  
 Thr Cys Leu Pro Trp Tyr Ile Ile Asn Thr Asp Ile Leu His Thr Pro  
           35                  40                  45  
 Cys Lys Ile Leu Leu Lys Leu Ser Ser Thr Trp His Val Glu Tyr Val  
           50                  55                  60  
 Pro  
   65

<210> 506  
 <211> 151  
 <212> PRT  
 <213> Homo sapiens

<400> 506  
 Met Val Val Ala Ala Val Tyr Ile Leu Tyr Leu Leu Phe Leu Ile Val  
           1                  5                  10                  15  
 Arg Ala Cys Ser Glu Leu Arg His Met Pro Tyr Val Asp Leu Arg Leu  
                   20                  25                  30  
 Lys Phe Leu Thr Ala Leu Thr Phe Val Val Leu Val Ile Ser Ile Ala  
           35                  40                  45  
 Ile Leu Tyr Leu Arg Phe Gly Ala Gln Val Leu Gln Asp Asn Phe Val  
           50                  55                  60  
 Ala Glu Leu Ser Thr His Tyr Gln Asn Ser Ala Glu Phe Leu Ser Phe  
   65                  70                  75                  80  
 Tyr Gly Leu Leu Asn Phe Tyr Leu Tyr Thr Leu Ala Phe Val Tyr Ser  
                   85                  90                  95  
 Pro Ser Lys Asn Ala Leu Tyr Glu Ser Gln Leu Lys Asp Asn Pro Ala  
           100                  105                  110  
 Phe Ser Met Leu Asn Asp Ser Asp Asp Asp Val Ile Tyr Gly Ser Asp  
           115                  120                  125  
 Tyr Glu Glu Met Pro Leu Gln Asn Gly Gln Ala Ile Arg Ala Lys Tyr  
           130                  135                  140  
 Lys Glu Glu Ser Asp Ser Asp

145

150

<210> 507  
 <211> 31  
 <212> PRT  
 <213> Homo sapiens

<400> 507  
 Leu Phe Leu Pro Phe Ser Met Val Leu Phe Cys Asp Pro Leu Asn Ser  
     1                    5                    10                    15  
 Lys Gly Ser Leu Ile Cys Gly Cys Phe Arg Ala Val Leu Pro Arg  
             20                    25                    30

<210> 508  
 <211> 151  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (130)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 508  
 Met Val Val Ala Ala Val Tyr Ile Leu Tyr Leu Leu Phe Leu Ile Val  
     1                    5                    10                    15  
 Arg Ala Cys Ser Glu Leu Arg His Met Pro Tyr Val Asp Leu Arg Leu  
             20                    25                    30  
 Lys Phe Leu Thr Ala Leu Thr Phe Val Val Leu Val Ile Ser Ile Ala  
             35                    40                    45  
 Ile Leu Tyr Leu Arg Phe Gly Ala Gln Val Leu Gln Asp Asn Phe Val  
     50                    55                    60  
 Ala Glu Leu Ser Thr His Tyr Gln Asn Ser Ala Glu Phe Leu Ser Phe  
     65                    70                    75                    80  
 Tyr Gly Leu Leu Asn Phe Tyr Leu Tyr Thr Leu Ala Phe Val Tyr Ser  
             85                    90                    95  
 Pro Ser Lys Asn Ala Leu Tyr Glu Ser Gln Leu Lys Asp Asn Pro Ala  
             100                    105                    110  
 Phe Ser Met Leu Asn Asp Ser Asp Asp Asp Val Ile Tyr Gly Ser Asp  
             115                    120                    125  
 Tyr Xaa Glu Met Pro Leu Gln Asn Gly Gln Ala Ile Arg Ala Lys Tyr  
     130                    135                    140  
 Lys Glu Glu Ser Asp Ser Asp  
 145                    150



<210> 509  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 509  
 Met Arg Cys Gly Glu Ile Ile Leu Ala Ser Val Leu Gly Leu Leu Leu  
           1                  5                  10                  15  
 Thr Leu Pro Pro Thr Ser Cys His Leu Asn Lys Ser Phe Pro Phe Leu  
                   20                  25                  30  
 Cys Leu Pro Trp Ser Gln Ala Leu Ser Leu Asn Pro His Ser Gly Asn  
                   35                  40                  45  
 Glu Ala Gly  
           50

<210> 510  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 510  
 Met Arg Cys Gly Glu Ile Ile Leu Ala Ser Val Leu Gly Leu Leu Leu  
           1                  5                  10                  15  
 Thr Leu Pro Pro Thr Ser Cys His Leu Asn Lys Ser Phe Pro Phe Leu  
                   20                  25                  30  
 Cys Leu Pro Trp Ser Gln Ala Leu Ser Leu Asn Pro His Ser Gly Asn  
                   35                  40                  45  
 Glu Ala Gly  
           50

<210> 511  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

<400> 511  
 Leu Arg Asp Pro Glu Asn Cys Val Glu Cys Gly Asp Gly Glu Cys Ala  
           1                  5                  10                  15  
 Cys Gly Cys Thr His Ile Gly Tyr Leu Cys Val Cys Thr Val Tyr Met  
                   20                  25                  30  
 Gln Gly Cys Val Tyr Val Cys Met Cys Ile Arg Val Trp Val Trp Val  
                   35                  40                  45  
 Trp Gly Val Phe Arg Glu Cys Ala Tyr Thr His Gly Cys Leu Gly Met  
           50                  55                  60  
 Cys Thr Cys Leu Cys Val Arg Gly Val Cys Val Cys Val Cys Met Val

[illegible]

```
<210> 512
<211> 90
<212> PRT
<213> Homo sapiens
```

```
<220>
<221> SITE
<222> (5)
<223> Xaa equals any of the naturally occurring L-amino acids
```

```
<400> 512
Met Tyr Arg Gly Xaa Arg Val Lys His Pro Phe Val Phe Arg Lys Leu
  1             5             10             15
```

Gln Val Thr Gln Asp Asp Trp Ile Val Arg Tyr Arg Gly Leu Lys Gly  
20 25 30

Asn Ala Glu Val Val His Arg Glu Gln Val Asn Leu Pro Arg Thr Met  
 . 35 40 45

Gly Leu Arg His Ala Leu Leu Thr Arg Arg Ala Thr Arg Ser Met Gly  
50 55 60

Ala Ile Cys Val Ala Gly Cys Gly Ile Pro Ala Gln Val Ser Leu Ser  
65 70 75 80

Lys Arg Gly Ile Leu Leu Val Pro Lys Thr  
85 90

```
<210> 513
<211> 45
<212> PRT
<213> Homo sapiens
```

```
<220>
<221> SITE
<222> (39)
<223> Xaa equals any of the naturally occurring L-amino acids
```

<400> 513  
Leu Gly Ser Ala Arg His Arg Pro His Ala Leu Val Leu Gly Met Ser  
1 5 10 15

Ser Pro Phe Leu Lys Lys Thr Cys Ser Ala Val Thr Thr Thr Lys Lys  
20 25 30

His Gly Glu Asp Trp Ala Xaa Asp Met Met Phe Ser Ser  
35 40 45

<210> 514  
 <211> 35  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (20)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 514  
 Leu Thr Ser Phe Gly Leu Arg Ala Ile Leu Ile Phe Gln Met Xaa Ser  
           1                  5                  10                  15  
 Asp Val Asn Xaa Ile Gly Lys His Gln Arg Asn Gly Cys Lys Val Ser  
                   20                  25                  30  
 Gly Thr Glu  
                   35

<210> 515  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 515  
 Met Gly Gln Ala Ser Ala Leu Ala Ser Leu Leu Leu Arg Ala Leu Ala  
           1                  5                  10                  15  
 Leu Val Leu Gly Ala Arg Ile Gly Lys Gly Gly Gln Arg Gly Met Ile  
                   20                  25                  30  
 Ile Ile Ser Ile Ala Ala Leu Pro Ser Thr Gly Cys Gln Glu Leu Tyr  
           35                  40                  45  
 Ile His  
           50

<210> 516  
 <211> 75  
 <212> PRT  
 <213> Homo sapiens

<400> 516  
 Ser Pro Ile Ile Phe Pro Leu Asn His Tyr Thr Arg Ile Ser His Leu  
           1                  5                  10                  15  
 Cys Pro Pro Asp Ile Leu Gly Trp Ile Ile Leu Gly Leu Gly Gly Cys

20					25					30					
Pro	Val	Arg	Cys	Arg	Thr	Phe	Ser	Ser	Ile	Leu	Gly	Leu	Phe	Leu	Leu
		35					40					45			
Asp	Ala	Ser	Ser	Thr	Pro	Phe	Leu	Ser	Tyr	Asp	Arg	Leu	Lys	Cys	Pro
	50					55					60				
Pro	Gly	Lys	Arg	Trp	Trp	Gln	Asn	Tyr	Pro	Trp					
65					70					75					

```
<210> 517
<211> 60
<212> PRT
<213> Homo sapiens
```

```

<400> 517
Met Asn Glu Ser Phe Tyr Cys Ser Ala Phe Leu Pro Ala Phe Ile Val
  1              5              10              15
Cys Trp Ile Leu Ala Ile Leu Ile Val Leu Thr Cys Gly Phe Arg Met
      20              25              30
Thr Asp Tyr Ile Glu His Leu His Glu Ile Leu Cys His Leu Tyr Ile
      35              40              45
Phe Phe Gly Lys Ala Ser Ile Ser Gly Leu Ser Thr
  50              55              60

```

```
<210> 518
<211> 60
<212> PRT
<213> Homo sapiens
```

```

<400> 518
Met Asn Glu Ser Phe Tyr Cys Ser Ala Phe Leu Pro Ala Phe Ile Val
  1                      5                      10                      15
Cys Trp Ile Leu Ala Ile Leu Ile Val Leu Thr Cys Gly Phe Arg Met
                      20                      25                      30
Thr Asp Tyr Ile Glu His Leu His Glu Ile Leu Cys His Leu Tyr Ile
                      35                      40                      45
Phe Phe Gly Lys Ala Ser Ile Ser Gly Leu Ser Thr
  50                      55                      60

```

```
<210> 519
<211> 33
<212> PRT
<213> Homo sapiens
```

<400> 519  
Met Ala Ala Ala Trp Phe Ile Leu Leu Phe Lys His Cys Val His Ser

1                      5                      10                      15  
Ser Ser Ile Val Asp Leu Ser Phe Lys Glu Ser Ser Pro Trp Asp Ile  
                        20                      25                      30

Lys

```
<210> 520
<211> 12
<212> PRT
<213> Homo sapiens
```

<400> 520  
Ala Trp Tyr Val Ile Ile Thr Leu Val Phe Asp Gly  
1 5 10

```
<210> 521
<211> 15
<212> PRT
<213> Homo sapiens
```

```
<220>
<221> SITE
<222> (10)
<223> Xaa equals any of the naturally occurring L-amino acids
```

```
<220>
<221> SITE
<222> (12)
<223> Xaa equals any of the naturally occurring L-amino acids
```

```
<400> 521
Ala Trp Tyr Val Val Met Ala Leu Thr Xaa Met Xaa Trp Asp Phe
  1             5             10             15
```

```
<210> 522
<211> 17
<212> PRT
<213> Homo sapiens
```

```
<400> 522
Leu Leu Leu Asn Phe Cys Ala Val Thr Ala Phe Phe Thr Pro Ile Leu
  1             5             10             15
```

Gln

```
<210> 523
<211> 33
<212> PRT
<213> Homo sapiens
```

&lt;400&gt; 523

Met Ala Ala Ala Trp Phe Ile Leu Leu Phe Lys His Cys Val His Ser  
 1 5 10 15

Ser Ser Ile Val Asp Leu Ser Phe Lys Glu Ser Ser Pro Trp Asp Ile  
 20 25 30

Lys

&lt;210&gt; 524

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (32)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 524

Leu Trp Arg Tyr Leu Gly Phe Cys Ile Leu Cys His Ile Trp Gln Lys  
 1 5 10 15

Thr Phe Tyr Leu Cys Cys His Glu Lys Gly Cys Thr Met Thr Gln Xaa  
 20 25 30

Pro Pro Gln Ala Ser Gly Pro Ala Glu Ala Lys Ser Glu His Arg Glu  
 35 40 45

Lys Arg Arg Lys Arg Glu Asp Arg Trp Gly Lys Gln Glu Arg Arg Asp  
 50 55 60

Arg Asp Val His Ile Leu Gly Cys Gln Val Trp His Ser Cys Ser Ala  
 65 70 75 80

Arg Val Ala Leu Ser  
 85

&lt;210&gt; 525

&lt;211&gt; 91

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (69)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 525

Met Arg Ala Cys Val Cys Val Tyr Ala Cys Ala His Met Cys Val Cys  
 1 5 10 15

Leu Ala Phe Ser Tyr Leu Ile Gly Cys Ile Lys Cys Arg Pro Lys Asp  
 20 25 30

Glu Gly Glu Asp Tyr Thr Gln Ser Leu Ala Val Thr Ala Ser Val Gln  
                   35                                  40                                  45

Lys Ser Cys Val Trp Ala Gln Asn Tyr Ser Leu His Ser Cys Asn Thr  
           50                                  55                                  60

Tyr Ala Ser Arg Xaa Gln Arg Ala Leu Ser Pro Gly Leu His Asn Arg  
   65                                  70                                  75                                  80

Arg Glu Lys Gln Leu Cys Gly Glu Leu Val Thr  
                                   85                                  90

<210> 526  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 526  
 Met Arg Ala Cys Val Cys Val Tyr Ala Cys Ala His Met Cys Val Cys  
   1                                  5                                  10                                  15

Leu Ala Phe Ser Tyr Leu Ile Gly Cys Ile Lys Cys Arg Pro Lys Asp  
                   20                                  25                                  30

Glu Gly Glu Asp Leu His Pro Lys Pro Gly Cys Asp Ser Phe Cys Pro  
           35                                  40                                  45

Glu Lys Leu Cys Leu Gly Ser Glu Leu Leu Thr Thr Phe Met Gln Tyr  
   50                                  55                                  60

Ile Cys Lys Gln Gly Ala Glu Ser Phe Ile Thr Gly Ala Thr Gln Gln  
   65                                  70                                  75                                  80

Lys Gly Lys Thr Val Met Trp Arg Ala Gly Asp Leu Thr Arg Glu Ala  
                                   85                                  90                                  95

<210> 527  
 <211> 48  
 <212> PRT  
 <213> Homo sapiens

<400> 527  
 Met Met Leu Tyr Gln Asn Met Leu Leu Tyr Phe Arg Ile Ile Gly Val  
   1                                  5                                  10                                  15

Leu Ala Leu Asn Phe Ser Ile Ser Pro Ile Phe Phe His Gly Ser Leu  
                   20                                  25                                  30

Gly Lys Leu Tyr Val Tyr Ser Ala Ala Lys Tyr Ser Leu Glu Leu Lys  
           35                                  40                                  45

<210> 528  
<211> 4  
<212> PRT  
<213> Homo sapiens

<400> 528  
Met Phe Lys Met  
1

<210> 529  
<211> 10  
<212> PRT  
<213> Homo sapiens

<400> 529  
Ile Tyr Gln His Phe Ser Leu Trp Leu Gly  
1 5 10

<210> 530  
<211> 48  
<212> PRT  
<213> Homo sapiens

<400> 530  
Met Met Leu Tyr Gln Asn Met Leu Leu Tyr Phe Arg Ile Ile Gly Val  
1 5 10 15

Leu Ala Leu Asn Phe Ser Ile Ser Pro Ile Phe Phe His Gly Ser Leu  
20 25 30

Gly Lys Leu Tyr Val Tyr Ser Ala Ala Lys Tyr Ser Leu Glu Leu Lys  
35 40 45

<210> 531  
<211> 22  
<212> PRT  
<213> Homo sapiens

<400> 531  
His Ser Asp Leu Gly Leu Ser Cys Pro Glu Leu Leu Leu Pro Cys Ile  
1 5 10 15

Ile Leu Ile Thr Phe Ser  
20



<210> 532  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 532

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Met His His His Ala His Leu Ser Cys Tyr Asp Phe Leu Met Leu Leu
 1          5          10          15

Phe Leu Leu Leu His Pro Leu Leu Pro Pro Pro Pro Thr Ala Ser Leu
          20          25          30

Pro Pro Ser Pro Leu Ile Cys Leu Phe Leu His Thr Val Pro Trp Asn
          35          40          45

Leu Ser Leu Ala Ser Ser His Ser Thr His Ser Leu Arg Ala Leu Pro
          50          55          60

Phe Thr Ser Ala Ile Val Tyr Thr Phe Thr Leu Asp His Ser Ser Glu
          65          70          75          80

Ile Ser Gln Leu Leu His Pro Asp Gly Cys Ser Ala Pro Pro Pro Gly
          85          90          95
  
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<210> 533  
 <211> 111  
 <212> PRT  
 <213> Homo sapiens

<400> 533

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Met His His His Ala His Leu Ser Cys Tyr Asp Phe Leu Met Leu Leu
 1          5          10          15

Phe Leu Leu Leu His Pro Leu Leu Pro Pro Pro Pro Thr Ala Ser Leu
          20          25          30

Pro Pro Ser Pro Leu Ile Cys Leu Phe Leu His Thr Val Pro Trp Asn
          35          40          45

Leu Ser Leu Ala Ser Ser His Ser Thr His Ser Leu Arg Ala Leu Pro
          50          55          60

Phe Thr Ser Ala Ile Val Tyr Thr Phe Thr Leu Asp His Ser Ser Glu
          65          70          75          80

Ile Ser Gln Leu Leu His Pro Asp Gly Cys Ser Ala Pro Pro Pro Gly
          85          90          95

Cys Pro Thr Gly Thr Leu Asn Pro Thr Ser Pro Lys Leu Asn Ser
          100          105          110
  
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<210> 534  
 <211> 70

<212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (20)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (60)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 534  
 Gly Arg Lys Arg Asp Gly Gly Trp Arg Lys Gly Gln Lys Ala Gln Val  
           1                  5                  10                  15  
 Glu Val Pro Xaa Leu Leu Ala Arg Arg Ile Leu Trp Pro Leu Gly Gly  
                   20                  25                  30  
 Trp Ser Gly Cys Val Asn Gln Ser Leu Ser Gln Trp Arg Ala Gly Leu  
                   35                  40                  45  
 Val Val Cys Val Phe Ile Thr Gly Pro His Pro Xaa His Thr His Thr  
           50                  55                  60  
 Arg Thr His Cys Gly Val  
       65                  70

<210> 535  
 <211> 70  
 <212> PRT  
 <213> Homo sapiens

<400> 535  
 Ala Leu Ser Ile Asn Lys Lys Gln Pro Asn Ala Trp Gly Glu Thr Val  
       1                  5                  10                  15  
 Thr Lys Gly Pro Ala Phe Arg Asn Trp Asp Val Lys Gly Val Glu Asn  
           20                  25                  30  
 Gly Trp Gly Val Lys Gly Glu His Val Lys Met Gln Glu Ser Ser Phe  
           35                  40                  45  
 Gly Asp Ile Ala Pro Gly Gly Met Trp Val Ser Met Asn Tyr Met Lys  
       50                  55                  60  
 Gly Cys Pro Ser Cys Ser  
       65                  70

<210> 536  
 <211> 55  
 <212> PRT  
 <213> Homo sapiens

<400> 536

Met Val Ala Val Cys Trp Cys Leu Ala Leu Thr Ala Lys Val Ser Ala  
 1 5 10 15  
 Ser Cys Ser Tyr Met Lys Leu Arg Pro Trp Pro Ala Asp Pro Trp Gln  
 20 25 30  
 Cys Trp Ala Trp Thr Trp Leu Pro Gln Pro Cys Cys Pro Ala Thr Thr  
 35 40 45  
 Gln Thr Leu Ala Trp Cys Ser  
 50 55

<210> 537  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<400> 537  
 Met Lys Cys Ser Lys Val Leu Thr Gln Leu Ile Leu Phe Thr Pro Leu  
 1 5 10 15  
 Gly Val Cys Lys Met Ser Leu Phe Tyr Lys His Asn His Asn Ser Asn  
 20 25 30  
 Lys Pro Gln Val Val Ala Ser Val  
 35 40

<210> 538  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<400> 538  
 Met Lys Cys Ser Lys Val Leu Thr Gln Leu Ile Leu Phe Thr Pro Leu  
 1 5 10 15  
 Gly Val Cys Lys Met Ser Leu Phe Tyr Lys His Asn His Asn Ser Asn  
 20 25 30  
 Lys Pro Gln Val Val Ala Ser Val  
 35 40

<210> 539  
 <211> 195  
 <212> PRT  
 <213> Homo sapiens

<400> 539  
 Arg Gln Ala Val Ile Val Cys Arg Arg Arg Phe Val Met Gly Pro Val  
 1 5 10 15  
 Arg Leu Gly Ile Leu Leu Phe Leu Phe Leu Ala Val His Glu Ala Trp  
 20 25 30

Ala Gly Met Leu Lys Glu Glu Asp Asp Asp Thr Glu Arg Leu Pro Ser  
                   35                                  40                                  45  
 Lys Cys Glu Val Cys Lys Leu Leu Ser Thr Glu Leu Gln Ala Glu Leu  
                   50                                  55                                  60  
 Ser Arg Thr Gly Arg Ser Arg Glu Val Leu Glu Leu Gly Gln Val Leu  
                   65                                  70                                  75                                  80  
 Asp Thr Gly Lys Arg Lys Arg His Val Pro Tyr Ser Val Ser Glu Thr  
                                   85                                  90                                  95  
 Arg Leu Glu Glu Ala Leu Glu Asn Leu Cys Glu Arg Ile Leu Asp Tyr  
                                   100                                  105                                  110  
 Ser Val His Ala Glu Arg Lys Gly Ser Leu Arg Tyr Ala Lys Gly Gln  
                                   115                                  120                                  125  
 Ser Gln Thr Met Ala Thr Leu Lys Gly Leu Val Gln Lys Gly Val Lys  
                                   130                                  135                                  140  
 Val Asp Leu Gly Ile Pro Leu Glu Leu Trp Asp Glu Pro Ser Val Glu  
                                   145                                  150                                  155                                  160  
 Val Thr Tyr Leu Lys Lys Gln Cys Glu Thr Met Leu Glu Arg Gly Gly  
                                   165                                  170                                  175  
 Arg Gly Gly Arg Gly Arg Gly Arg Gln Asp Asp Gln Asp Arg Lys Pro  
                                   180                                  185                                  190  
 Pro Gln Thr  
                   195

&lt;210&gt; 540

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (14)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 540

Trp Pro Thr Val Ala Ser Pro Arg Thr Ala Ser Arg Pro Xaa Gly Pro  
                   1                                  5                                  10                                  15  
 Cys Gln Asn Cys Ala Cys Trp Thr Thr Ser Gly Ala Gly Cys Arg Pro  
                                   20                                  25                                  30  
 Gly Gln Thr Ser Met Pro Pro Trp Thr Thr Gly Pro Arg Cys Cys Thr  
                                   35                                  40                                  45  
 Ser Gln Pro Pro Thr Gly Ser Ala Arg Arg Leu Pro Cys Cys Trp Asn  
                   50                                  55                                  60  
 Thr Glu Pro Ala  
                   65

<210> 541  
 <211> 201  
 <212> PRT  
 <213> Homo sapiens

<400> 541  
 Arg Gln Ala Val Ile Val Cys Arg Arg Arg Phe Val Met Gly Pro Val  
     1                    5                    10                    15  
 Arg Leu Gly Ile Leu Leu Phe Leu Phe Leu Ala Val His Glu Ala Trp  
                     20                    25                    30  
 Ala Gly Met Leu Lys Glu Glu Asp Asp Asp Thr Glu Arg Leu Pro Ser  
                     35                    40                    45  
 Lys Cys Glu Val Cys Lys Leu Leu Ser Thr Glu Leu Gln Ala Glu Leu  
     50                    55                    60  
 Ser Arg Thr Gly Arg Ser Arg Glu Val Leu Glu Leu Gly Gln Val Leu  
     65                    70                    75                    80  
 Asp Thr Gly Lys Arg Lys Arg His Val Pro Tyr Ser Val Ser Glu Thr  
                     85                    90                    95  
 Arg Leu Glu Glu Ala Leu Glu Asn Leu Cys Glu Arg Ile Leu Asp Tyr  
                     100                    105                    110  
 Ser Val His Ala Glu Arg Lys Gly Ser Leu Arg Tyr Ala Lys Gly Gln  
     115                    120                    125  
 Ser Gln Thr Met Ala Thr Leu Lys Gly Leu Val Gln Lys Gly Val Lys  
     130                    135                    140  
 Val Asp Leu Gly Ile Pro Leu Glu Leu Trp Asp Glu Pro Ser Val Glu  
     145                    150                    155                    160  
 Val Thr Tyr Leu Lys Lys Gln Cys Glu Thr Met Leu Glu Glu Glu Glu  
                     165                    170                    175  
 Glu Glu Glu Glu Glu Glu Gly Gly Asp Lys Met Thr Lys Thr Gly Ser  
                     180                    185                    190  
 His Pro Lys Leu Asp Arg Glu Asp Leu  
     195                    200

<210> 542  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 542  
 Met Pro Pro Arg Ala Ala Trp Ala Trp Leu Leu Cys Gly Ala Ser  
     1                    5                    10                    15

<210> 543  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 543  
 Met Pro Pro Arg Ala Ala Trp Ala Trp Leu Leu Cys Gly Ala Ser  
           1                  5                  10                  15

<210> 544  
 <211> 116  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (7)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (16)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 544  
 Ser Gln Leu Leu Arg Arg Xaa Arg Gln Glu Asp Cys Leu Ser Pro Xaa  
           1                  5                  10                  15

Gly Gly Ser Cys Ser Glu Pro Arg Leu Arg His Cys Thr Pro Ala Trp  
                   20                  25                  30

Val Thr Glu Arg Asp Ser Val Ser Lys Lys Lys Lys Lys Thr Ser Glu  
                   35                  40                  45

Val Gly Ala Val Pro Tyr Phe Cys Pro Thr Pro Ile Lys Arg Ile Pro  
           50                  55                  60

Lys Thr Thr Cys Gly Asn Leu Ile Ile Leu Ser Asn Leu Leu Phe Gly  
           65                  70                  75                  80

Gln Asp Trp His Leu Pro Cys Phe Ser Leu Leu Leu Ala Val Lys His  
                   85                  90                  95

Gly Phe Lys Glu Glu Cys Phe Ser Glu Phe Thr Leu Tyr Ile Ser Asp  
           100                  105                  110

Leu Glu Val Ile  
           115

<210> 545  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 545

Met Ile Leu Ile Met Ser Met Asp Ser Val Lys Leu Val Leu Gly Trp  
 1 5 10 15  
 Pro Leu Trp Val Leu Cys Phe Trp Gln Ala Ala Trp Cys Phe Lys Lys  
 20 25 30  
 Ala Phe Glu Trp Gln Gln Thr Leu Pro Leu Tyr Ser Thr Glu Met Val  
 35 40 45  
 Asn Lys Pro  
 50

<210> 546  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 546  
 Met Ile Leu Ile Met Ser Met Asp Ser Val Lys Leu Val Leu Gly Trp  
 1 5 10 15  
 Pro Leu Trp Val Leu Cys Phe Trp Gln Ala Ala Trp Cys Phe Lys Lys  
 20 25 30  
 Ala Phe Glu Trp Gln Gln Thr Leu Pro Leu Tyr Ser Thr Glu Met Val  
 35 40 45  
 Asn Lys Pro  
 50

<210> 547  
 <211> 69  
 <212> PRT  
 <213> Homo sapiens

<400> 547  
 Met Ala Ala Ala Arg Asn Leu Arg Thr Ala Leu Ile Phe Gly Gly Phe  
 1 5 10 15  
 Ile Ser Met Val Gly Ala Ala Phe Tyr Pro Ile Tyr Phe Arg Pro Leu  
 20 25 30  
 Met Arg Leu Glu Glu Tyr Gln Lys Glu Gln Ala Val Asn Arg Ala Gly  
 35 40 45  
 Ile Val Gln Glu Asp Val Gln Pro Pro Gly Leu Lys Val Trp Ser Asp  
 50 55 60  
 Pro Phe Gly Arg Lys  
 65

<210> 548  
 <211> 69  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 548

Met Ala Ala Ala Arg Asn Leu Arg Thr Ala Leu Ile Phe Gly Gly Phe  
 1 5 10 15

Ile Ser Met Val Gly Ala Ala Phe Tyr Pro Ile Tyr Phe Arg Pro Leu  
 20 25 30

Met Arg Leu Glu Glu Tyr Gln Lys Glu Gln Ala Val Asn Arg Ala Gly  
 35 40 45

Ile Val Gln Glu Asp Val Gln Pro Pro Gly Leu Lys Val Trp Ser Asp  
 50 55 60

Pro Phe Gly Arg Lys  
 65

&lt;210&gt; 549

&lt;211&gt; 79

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 549

Ser Gly Trp Gln Val Pro Ser Ser Val Lys His Leu Pro Tyr Asp Asn  
 1 5 10 15

Leu Arg Ser His Cys Val Ala Asp Glu Gly Glu Thr Glu Val Glu Gly  
 20 25 30

Thr Arg Ala Thr Trp Val Glu His Ser Gly Arg Pro Gly Val Gly Ser  
 35 40 45

Gly Arg Pro Pro Gly Thr Ser Leu Thr Thr Leu Pro Leu Leu Leu Thr  
 50 55 60

His Leu Ser Leu Thr Cys Pro Leu Gly Gly Asp Phe Ser Lys Arg  
 65 70 75

&lt;210&gt; 550

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 550

Met Pro Val Pro Leu Leu Ala Ser Ala Ala Trp Cys His Leu Cys Ala  
 1 5 10 15

Gly Ala Leu Pro Ala Trp Leu Trp Leu Pro Trp Arg Ala Ala Ala Ala  
 20 25 30

Gln Trp His Val Cys Ala Ser His Cys Leu Pro Leu His Pro Ala Phe  
 35 40 45

Ser Ala Leu Gly Pro His Pro Asp Pro Gly Arg Ala Gly Pro Gly Ala  
 50 55 60



Ala Pro Arg Asp Cys Ala His Pro Glu Leu His Pro Leu Cys Leu Pro  
 65 70 75 80

Arg Trp Ser Leu Gln Leu Leu Pro Arg  
 85

<210> 551  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<400> 551  
 Pro Trp Ala Ser Ser His Leu Gly Pro Arg Pro Tyr Val His Gly Leu  
 1 5 10 15

Ala Pro Ser Gly Pro  
 20

<210> 552  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

<400> 552  
 Pro Trp Pro Pro Leu Val  
 1 5

<210> 553  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

<400> 553  
 Pro Trp Pro Pro Leu Val  
 1 5

<210> 554  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 554  
 Asp Ile Leu Asn Leu Tyr Cys Thr Phe Tyr Leu Arg Gly Ser Ser Phe  
 1 5 10 15

Thr Cys Val Phe Ile Cys Val Tyr Leu Ser Tyr Ser Lys Arg Ser Arg  
 20 25 30

Glu Ser Pro Cys Pro Arg Ser Ser Ile Leu Arg Ser Glu Asp Val Gln  
 35 40 45

Asn Ser Ser Arg  
50

<210> 555  
<211> 39  
<212> PRT  
<213> Homo sapiens

<400> 555  
Met Gly Gly Asn Val Leu Ile Phe His Phe Arg Cys Leu Trp Lys Cys  
1 5 10 15  
Trp Gly Arg Val Arg Gly Leu Phe Leu Ser Gly Gly Pro Leu Thr Gln  
20 25 30  
Ser Ile Phe Asn Ser Leu Phe  
35

<210> 556  
<211> 12  
<212> PRT  
<213> Homo sapiens

<400> 556  
Gly Gly Asn Val Leu Ile Phe His Phe Arg Cys Leu  
1 5 10

<210> 557  
<211> 70  
<212> PRT  
<213> Homo sapiens

<400> 557  
Met Ser His Cys Thr Trp Pro Leu Asp Tyr Ser Phe Leu Phe Met Ser  
1 5 10 15  
Cys Ala Ser Ile Cys Gly Gln His Gly Ala Ser Val Gly Asn Thr Gly  
20 25 30  
Arg Lys Gln Val Gln Ile Trp Leu Gly Leu Leu Ala Trp Gln Leu Gly  
35 40 45  
Lys Pro Pro Leu Leu Trp Leu Leu Pro Arg Leu Phe Met Thr Val Ala  
50 55 60  
Ala His Gln Leu Gln Leu  
65 70

<210> 558  
<211> 70  
<212> PRT  
<213> Homo sapiens

&lt;400&gt; 558

Met Ser His Cys Thr Trp Pro Leu Asp Tyr Ser Phe Leu Phe Met Ser  
 1 5 10 15

Cys Ala Ser Ile Cys Gly Gln His Gly Ala Ser Val Gly Asn Thr Gly  
 20 25 30

Arg Lys Gln Val Gln Ile Trp Leu Gly Leu Leu Ala Trp Gln Leu Gly  
 35 40 45

Lys Pro Pro Leu Leu Trp Leu Leu Pro Arg Leu Phe Met Thr Val Ala  
 50 55 60

Ala His Gln Leu Gln Leu  
 65 70

&lt;210&gt; 559

&lt;211&gt; 62

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 559

Val Tyr Gln Arg Lys Ser Thr Val Val Leu Gly Gly Phe Leu Leu Trp  
 1 5 10 15

Asp Ile Asp Phe Leu Phe Phe Phe Arg Asn Ile Val Cys Cys Asn Leu  
 20 25 30

Asn Lys Asn Tyr Asp Ile Leu Arg Tyr Phe Ile Asp Lys Pro Asn Lys  
 35 40 45

Asn Ile Cys Phe Tyr Phe Lys Val Asn Val Phe Leu Phe Ser  
 50 55 60

&lt;210&gt; 560

&lt;211&gt; 47

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 560

Met Leu Arg Phe Ser Ser Ser Leu Leu Glu Cys Leu Leu Ser Pro Leu  
 1 5 10 15

Cys Leu Thr Asp Ala Thr Gly His His Leu Asp His Pro Ile Leu Val  
 20 25 30

Pro Val Gln Val Gln Lys Arg Asn Asn Val Leu Lys Phe Thr Ser  
 35 40 45

&lt;210&gt; 561

&lt;211&gt; 49

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 561

Met Leu Ile Thr Ile Ser Leu Glu Leu Leu Leu Arg Leu Val Gly Ala  
 1 5 10 15

Ala Leu Gln Glu Lys Gln Gln Pro Leu Ser Leu Pro Ser Cys Gly Glu  
 20 25 30

Gln Gly Gly Asp Glu Arg Tyr Leu Gly Arg Pro Gly Lys Ser Leu Lys  
 35 40 45

Asn

&lt;210&gt; 562

&lt;211&gt; 49

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 562

Met Leu Ile Thr Ile Ser Leu Glu Leu Leu Leu Arg Leu Val Gly Ala  
 1 5 10 15

Ala Leu Gln Glu Lys Gln Gln Pro Leu Ser Leu Pro Ser Cys Gly Glu  
 20 25 30

Gln Gly Gly Asp Glu Arg Tyr Leu Gly Arg Pro Gly Lys Ser Leu Lys  
 35 40 45

Asn

&lt;210&gt; 563

&lt;211&gt; 47

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (25)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 563

Met Leu Ile Phe Ser Phe Leu Ser Phe Trp Phe Phe Gln Ser Cys Gln  
 1 5 10 15

Gly Phe Ile Tyr Phe Met Ser Ile Xaa Glu Glu Pro Val Ala Asp Phe  
 20 25 30

Val His Leu Tyr Cys Val Phe Tyr Phe Gln Gly Cys Ser Tyr Leu  
 35 40 45

&lt;210&gt; 564

&lt;211&gt; 128

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 564

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Phe Ser Asn Thr Trp Ser Phe Pro Lys Asp Ala Phe Tyr Thr Asp Phe
 1             5             10             15

Tyr Leu Lys Ser Ile Val Val Arg Glu Tyr Cys Val Phe Cys Ser Asn
          20             25             30

Pro Leu Lys Tyr Ile Glu Thr Cys Leu Ile Cys Lys Tyr Arg Phe Ser
          35             40             45

Tyr Phe Ser Ile Cys Asp Trp Lys Asn Ile Asn Leu Thr Ile Trp Gly
 50             55             60

Tyr Ser Ile His Thr Ile His Thr Asn Ile Tyr Val Phe Ser Val Leu
 65             70             75             80

Gln Asn Phe Tyr Ile Phe Pro Gly Ile Cys Leu Leu Ala Ser Leu Ile
          85             90             95

Thr Glu Arg Cys Thr Ile Leu Ser Cys Thr Phe Phe Cys Cys Ser Leu
          100             105             110

Ile Phe Leu Ser Tyr Pro Tyr Gly Asn Cys Ile Lys Cys Ile Pro Ile
 115             120             125

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&lt;210&gt; 565

&lt;211&gt; 47

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 565

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Met Leu Ile Phe Ser Phe Leu Ser Phe Trp Phe Phe Gln Ser Cys Gln
 1             5             10             15

Gly Phe Ile Tyr Phe Met Ser Ile Phe Glu Glu Pro Val Ala Asp Phe
          20             25             30

Val His Leu Tyr Cys Val Phe Tyr Phe Gln Gly Cys Ser Tyr Leu
          35             40             45

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&lt;210&gt; 566

&lt;211&gt; 34

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 566

```

Pro Cys Ser Trp Leu Arg Ala Val Thr Leu Cys Gln Asn Leu His Trp
 1             5             10             15

Ala Cys Thr Ser Cys His Cys Asn Cys Pro Cys Gln Cys Pro Gln Leu

```

20

25

30

Leu Phe

&lt;210&gt; 567

&lt;211&gt; 193

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 567

Met Cys Leu Leu Phe Leu Leu Pro Arg Phe Pro Val Ser Trp Arg Ala  
 1 5 10 15

Gly Val Asp Gly Ala Ala Pro Ser Ser Gln Asp Leu Trp Arg Ile Arg  
 20 25 30

Ser Pro Cys Gly Asp Cys Glu Gly Phe Asp Val His Ile Met Asp Asp  
 35 40 45

Met Ile Lys Arg Ala Leu Asp Phe Arg Glu Ser Arg Glu Ala Glu Pro  
 50 55 60

His Pro Leu Trp Glu Tyr Pro Cys Arg Ser Leu Ser Glu Pro Trp Gln  
 65 70 75 80

Ile Leu Thr Phe Asp Phe Gln Gln Pro Val Pro Leu Gln Pro Leu Cys  
 85 90 95

Ala Glu Gly Thr Val Glu Leu Arg Arg Pro Gly Gln Ser His Ala Ala  
 100 105 110

Val Leu Trp Met Glu Tyr His Leu Thr Pro Glu Cys Thr Leu Ser Thr  
 115 120 125

Gly Leu Leu Glu Pro Ala Asp Pro Glu Gly Gly Cys Cys Trp Asn Pro  
 130 135 140

His Cys Lys Gln Ala Val Tyr Phe Phe Ser Pro Ala Pro Asp Pro Arg  
 145 150 155 160

Ala Leu Leu Gly Gly Pro Arg Thr Val Ser Tyr Ala Val Glu Phe His  
 165 170 175

Pro Asp Thr Gly Asp Ile Ile Met Glu Phe Arg His Ala Asp Thr Pro  
 180 185 190

Asp

&lt;210&gt; 568

&lt;211&gt; 138

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 568

Met Cys Leu Leu Phe Leu Leu Pro Arg Phe Pro Val Ser Trp Arg Ala  
 1 5 10 15  
 Gly Val Asp Gly Ala Ala Pro Ser Ser Gln Asp Leu Trp Arg Ile Arg  
 20 25 30  
 Ser Pro Cys Gly Asp Cys Glu Gly Phe Asp Val His Ile Met Asp Asp  
 35 40 45  
 Met Ile Lys Val Gly Arg Ala Thr Leu Cys Ile Val Pro Pro Thr Cys  
 50 55 60  
 Ser Cys Ile Ala Gly Leu Ser Gln Gly Pro Ser Leu Gly Ser Thr Gly  
 65 70 75 80  
 Ser Ser Val Gly Gly Ser Glu Val Arg Cys Cys His Phe Val Trp Phe  
 85 90 95  
 Asn Met Ser Ile Ala Trp Tyr Gln Pro Cys Ser Trp Leu Arg Ala Val  
 100 105 110  
 Thr Leu Cys Gln Asn Leu His Trp Ala Cys Thr Ser Cys His Cys Asn  
 115 120 125  
 Cys Pro Cys Gln Cys Pro Gln Leu Leu Phe  
 130 135

<210> 569  
 <211> 48  
 <212> PRT  
 <213> Homo sapiens

<400> 569  
 Met Arg Gly Asp Ala Pro Pro Ile Asn Leu Gly Cys Leu Pro Phe Phe  
 1 5 10 15  
 Leu Cys Leu Phe Phe Phe Cys His Leu Lys Tyr Tyr Leu Ser Leu Leu  
 20 25 30  
 Gly Asn Leu Arg Pro Ile Asp Glu Val Tyr Met Cys Leu Ser Asp Ile  
 35 40 45

<210> 570  
 <211> 17  
 <212> PRT  
 <213> Homo sapiens

<400> 570  
 Phe Leu Ser Leu Leu Phe Phe Phe Leu Ala Phe Ser Phe Phe Thr Glu  
 1 5 10 15

Ala

<210> 571  
 <211> 48  
 <212> PRT  
 <213> Homo sapiens

<400> 571  
 Met Arg Gly Asp Ala Pro Pro Ile Asn Leu Gly Cys Leu Pro Phe Phe  
           1                  5                  10                  15  
 Leu Cys Leu Phe Phe Phe Cys His Leu Lys Tyr Tyr Leu Ser Leu Leu  
                   20                  25                  30  
 Gly Asn Leu Arg Pro Ile Asp Glu Val Tyr Met Cys Leu Ser Asp Ile  
           35                  40                  45

<210> 572  
 <211> 184  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (153)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (178)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (181)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (182)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 572  
 Val Arg Met Lys Tyr Leu Phe Phe Ser Trp Leu Val Val Phe Val Gly  
           1                  5                  10                  15  
 Ser Trp Ile Ile Tyr Val Gln Tyr Ser Thr Tyr Thr Glu Leu Cys Arg  
                   20                  25                  30  
 Gly Lys Asp Cys Lys Lys Ile Ile Cys Asp Lys Tyr Lys Thr Gly Val  
           35                  40                  45  
 Ile Asp Gly Pro Ala Cys Asn Ser Leu Cys Val Thr Glu Thr Leu Tyr  
           50                  55                  60



Phe Gly Lys Cys Leu Ser Thr Lys Pro Asn Asn Gln Met Tyr Leu Gly  
 65 70 75 80  
 Ile Trp Asp Asn Leu Pro Gly Val Val Lys Cys Gln Met Glu Gln Ala  
 85 90 95  
 Leu His Leu Asp Phe Gly Thr Glu Leu Glu Pro Arg Lys Glu Ile Val  
 100 105 110  
 Leu Phe Asp Lys Pro Thr Arg Gly Thr Thr Val Gln Lys Phe Lys Glu  
 115 120 125  
 Met Val Tyr Ser Leu Phe Lys Ala Lys Leu Gly Asp Gln Gly Asn Leu  
 130 135 140  
 Ser Glu Leu Val Asn Leu Ile Leu Xaa Val Ala Asp Gly Asp Lys Asp  
 145 150 155 160  
 Gly Gln Val Ser Leu Gly Glu Ala Lys Ser Ala Trp Ala Leu Leu Gln  
 165 170 175  
 Leu Xaa Glu Phe Xaa Xaa His Gly  
 180

<210> 573  
 <211> 3  
 <212> PRT  
 <213> Homo sapiens

<400> 573  
 Tyr Thr Val  
 1

<210> 574  
 <211> 403  
 <212> PRT  
 <213> Homo sapiens

<400> 574  
 Met Lys Tyr Leu Phe Phe Ser Trp Leu Val Val Phe Val Gly Ser Trp  
 1 5 10 15  
 Ile Ile Tyr Val Gln Tyr Ser Thr Tyr Thr Glu Leu Cys Arg Gly Lys  
 20 25 30  
 Asp Cys Lys Lys Ile Ile Cys Asp Lys Tyr Lys Thr Gly Val Ile Asp  
 35 40 45  
 Gly Pro Ala Cys Asn Ser Leu Cys Val Thr Glu Thr Leu Tyr Phe Gly  
 50 55 60  
 Lys Cys Leu Ser Thr Lys Pro Asn Asn Gln Met Tyr Leu Gly Ile Trp  
 65 70 75 80  
 Asp Asn Leu Pro Gly Val Val Lys Cys Gln Met Glu Gln Ala Leu His

85										90					95				
Leu	Asp	Phe	Gly	Thr	Glu	Leu	Glu	Pro	Arg	Lys	Glu	Ile	Val	Leu	Phe				
			100					105					110						
Asp	Lys	Pro	Thr	Arg	Gly	Thr	Thr	Val	Gln	Lys	Phe	Lys	Glu	Met	Val				
		115					120					125							
Tyr	Ser	Leu	Phe	Lys	Ala	Lys	Leu	Gly	Asp	Gln	Gly	Asn	Leu	Ser	Glu				
	130					135					140								
Leu	Val	Asn	Leu	Ile	Leu	Thr	Val	Ala	Asp	Gly	Asp	Lys	Asp	Gly	Gln				
145					150					155					160				
Val	Ser	Leu	Gly	Glu	Ala	Lys	Ser	Ala	Trp	Ala	Leu	Leu	Gln	Leu	Asn				
				165					170					175					
Glu	Phe	Leu	Leu	Met	Val	Ile	Leu	Gln	Asp	Lys	Glu	His	Thr	Pro	Lys				
			180					185					190						
Leu	Met	Gly	Phe	Cys	Gly	Asp	Leu	Tyr	Val	Met	Glu	Ser	Val	Glu	Tyr				
		195					200					205							
Thr	Ser	Leu	Tyr	Gly	Ile	Ser	Leu	Pro	Trp	Val	Ile	Glu	Leu	Phe	Ile				
	210					215					220								
Pro	Ser	Gly	Phe	Arg	Arg	Ser	Met	Asp	Gln	Leu	Phe	Thr	Pro	Ser	Trp				
225					230					235					240				
Pro	Arg	Lys	Ala	Lys	Ile	Ala	Ile	Gly	Leu	Leu	Glu	Phe	Val	Glu	Asp				
				245					250					255					
Val	Phe	His	Gly	Pro	Tyr	Gly	Asn	Phe	Leu	Met	Cys	Asp	Thr	Ser	Ala				
			260					265					270						
Lys	Asn	Leu	Gly	Tyr	Asn	Asp	Lys	Tyr	Asp	Leu	Lys	Met	Val	Asp	Met				
	275						280					285							
Arg	Lys	Ile	Val	Pro	Glu	Thr	Asn	Leu	Lys	Glu	Leu	Ile	Lys	Asp	Arg				
	290					295					300								
His	Cys	Glu	Ser	Asp	Leu	Asp	Cys	Val	Tyr	Gly	Thr	Asp	Cys	Arg	Thr				
305					310					315					320				
Ser	Cys	Asp	Gln	Ser	Thr	Met	Lys	Cys	Thr	Ser	Glu	Val	Ile	Gln	Pro				
				325					330					335					
Asn	Leu	Ala	Lys	Ala	Cys	Gln	Leu	Leu	Lys	Asp	Tyr	Leu	Leu	Arg	Gly				
			340				345						350						
Ala	Pro	Ser	Glu	Ile	Arg	Glu	Glu	Leu	Glu	Lys	Gln	Leu	Tyr	Ser	Cys				
		355					360					365							
Ile	Ala	Leu	Lys	Val	Thr	Ala	Asn	Gln	Met	Glu	Met	Glu	His	Ser	Leu				
	370					375					380								
Ile	Leu	Asn	Asn	Leu	Lys	Thr	Leu	Leu	Trp	Lys	Lys	Ile	Ser	Tyr	Thr				
385					390					395					400				
Asn	Asp	Ser																	

<210> 575  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 575  
 Met Ser Arg Phe Ser Gln Asn Phe Arg Gly Lys Glu Asp His Ile Val  
           1                  5                  10                  15  
 Phe Leu Phe Cys Phe Asn Glu Ile Phe Phe Leu Leu Leu Met Leu Leu  
                   20                  25                  30  
 Val Phe Pro Trp Leu Leu Ser Lys Ala Val Ser Gly Phe Ala Glu Arg  
           35                  40                  45  
 Leu Glu Met Thr Thr Ile Phe Arg Val Ser Arg Ser  
           50                  55                  60

<210> 576  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 576  
 Met Ser Arg Phe Ser Gln Asn Phe Arg Gly Lys Glu Asp His Ile Val  
           1                  5                  10                  15  
 Phe Leu Phe Cys Phe Asn Glu Ile Phe Phe Leu Leu Leu Met Leu Leu  
                   20                  25                  30  
 Val Phe Pro Trp Leu Leu Ser Lys Ala Val Ser Gly Phe Ala Glu Arg  
           35                  40                  45  
 Leu Glu Met Thr Thr Ile Phe Arg Val Ser Arg Ser  
           50                  55                  60

<210> 577  
 <211> 127  
 <212> PRT  
 <213> Homo sapiens

<400> 577  
 Met Gly Gln Val Trp Arg Val Pro Pro Leu Leu Leu Ser Val Gln Val  
           1                  5                  10                  15  
 Phe Leu Thr Met Ala His Ala Phe His Gln Ala Pro Glu Leu Gln Trp  
                   20                  25                  30  
 Leu Gly Leu Trp Phe Trp Val Arg Leu Phe Ala Gly Gly Asp Gly Gly  
           35                  40                  45  
 Leu His Leu Asn Ile Ser Ser Val Thr Leu Pro Leu Leu His Gly Lys

50				55				60							
Gln	Leu	Ser	Arg	Glu	Val	Pro	Ser	Cys	Gln	Gly	Lys	Pro	Arg	Leu	Gly
65					70					75					80
Arg	Pro	Pro	Tyr	Lys	Glu	Pro	Gln	Asp	Cys	Ser	His	Gly	Cys	His	Leu
				85					90					95	
Ser	Trp	Lys	Gly	Arg	Phe	Met	Gly	Phe	Pro	Gly	Thr	Pro	Arg	Leu	Ser
			100					105					110		
Trp	Pro	Arg	Gly	Lys	Arg	Trp	Leu	Leu	Gln	Glu	Phe	Asp	Leu	Ser	
		115					120					125			

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<210> 578
<211> 9
<212> PRT
<213> Homo sapiens
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<400> 578  
Leu Gly Lys Pro Trp Arg Tyr Pro Thr  
1 5

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<210> 579
<211> 127
<212> PRT
<213> Homo sapiens
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<400> 579  
Met Gly Gln Val Trp Arg Val Pro Pro Leu Leu Leu Ser Val Gln Val  
1 5 10 15

Phe Leu Thr Met Ala His Ala Phe His Gln Ala Pro Glu Leu Gln Trp  
20 25 30

Leu Gly Leu Trp Phe Trp Val Arg Leu Phe Ala Gly Gly Asp Gly Gly  
35 40 45

Leu His Leu Asn Ile Ser Ser Val Thr Leu Pro Leu Leu His Gly Lys  
50 55 60

Gln Leu Ser Arg Glu Val Pro Ser Cys Gln Gly Lys Pro Arg Leu Gly  
65 70 75 80

Arg Pro Pro Tyr Lys Glu Pro Gln Asp Cys Ser His Gly Cys His Leu  
85 90 95

Ser Trp Lys Gly Arg Phe Met Gly Phe Pro Gly Thr Pro Arg Leu Ser  
100 105 110

Trp Pro Arg Gly Lys Arg Trp Leu Leu Gln Glu Phe Asp Leu Ser  
115 120 125

<210> 580

<211> 61  
<212> PRT  
<213> Homo sapiens

<400> 580

Met Lys Ser Ala Leu His Arg Asp Ile Cys Ile Leu Met Leu Thr Ala  
1 5 10 15  
Ala Leu Phe Thr Ile Ala Lys Thr Glu Lys Gln His Lys Cys Pro Ser  
20 25 30  
Ile Asp Glu Gln Ile Asn Asn Leu Gln Tyr Ile Cys Thr Met Glu Tyr  
35 40 45  
His Ser Ala Leu Gln Lys Glu Met Leu Leu Tyr Leu Gln  
50 55 60

<210> 581  
<211> 61  
<212> PRT  
<213> Homo sapiens

<400> 581

Met Lys Ser Ala Leu His Arg Asp Ile Cys Ile Leu Met Leu Thr Ala  
1 5 10 15  
Ala Leu Phe Thr Ile Ala Lys Thr Glu Lys Gln His Lys Cys Pro Ser  
20 25 30  
Ile Asp Glu Gln Ile Asn Asn Leu Gln Tyr Ile Cys Thr Met Glu Tyr  
35 40 45  
His Ser Ala Leu Gln Lys Glu Met Leu Leu Tyr Leu Gln  
50 55 60

<210> 582  
<211> 61  
<212> PRT  
<213> Homo sapiens

<400> 582

Met Lys Ser Ala Leu His Arg Asp Ile Cys Ile Leu Met Leu Thr Ala  
1 5 10 15  
Ala Leu Phe Thr Ile Ala Lys Thr Glu Lys Gln His Lys Cys Pro Ser  
20 25 30  
Ile Asp Glu Gln Ile Asn Asn Leu Gln Tyr Ile Cys Thr Met Glu Tyr  
35 40 45  
His Ser Ala Leu Gln Lys Glu Met Leu Leu Tyr Leu Gln  
50 55 60

<210> 583

<211> 41  
 <212> PRT  
 <213> Homo sapiens

<400> 583

Met Leu Val Ser Met Cys Met Gly Leu Leu Phe Leu Gln Val Gly Lys  
 1 5 10 15  
 Gln Cys Ile Ala Phe Phe Tyr Thr Glu Ser Thr Arg Arg Pro Lys His  
 20 25 30  
 Leu Lys Thr Met Gly Ser Gly Tyr Ala  
 35 40

<210> 584

<211> 41  
 <212> PRT  
 <213> Homo sapiens

<400> 584

Met Leu Val Ser Met Cys Met Gly Leu Leu Phe Leu Gln Val Gly Lys  
 1 5 10 15  
 Gln Cys Ile Ala Phe Phe Tyr Thr Glu Ser Thr Arg Arg Pro Lys His  
 20 25 30  
 Leu Lys Thr Met Gly Ser Gly Tyr Ala  
 35 40

<210> 585

<211> 241  
 <212> PRT  
 <213> Homo sapiens

<220>

<221> SITE

<222> (58)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 585

Met Phe Lys Leu Arg Gln Met Arg Val Glu Lys Phe Ile Tyr Glu Asn  
 1 5 10 15  
 His Pro Asp Val Phe Ser Asp Ser Ser Met Asp His Phe Gln Lys Phe  
 20 25 30  
 Leu Pro Thr Val Gly Gly Gln Leu Gly Thr Ala Gly Gln Gly Phe Ser  
 35 40 45  
 Tyr Ser Lys Ser Asn Gly Arg Gly Gly Xaa Gln Ala Gly Gly Ser Gly  
 50 55 60  
 Ser Ala Gly Gln Tyr Gly Ser Asp Gln Gln His His Leu Gly Ser Gly  
 65 70 75 80  
 Ser Gly Ala Gly Gly Thr Gly Gly Pro Ala Gly Gln Ala Gly Arg Gly

85 90 95  
 Gly Ala Ala Gly Thr Ala Gly Val Gly Glu Thr Gly Ser Gly Asp Gln  
 100 105 110  
 Ala Gly Gly Glu Gly Lys His Ile Thr Val Phe Lys Thr Tyr Ile Ser  
 115 120 125  
 Pro Trp Glu Arg Ala Met Gly Val Asp Pro Gln Gln Lys Met Glu Leu  
 130 135 140  
 Gly Ile Asp Leu Leu Ala Tyr Gly Ala Lys Ala Glu Leu Pro Lys Tyr  
 145 150 155 160  
 Lys Ser Phe Asn Arg Thr Ala Met Pro Tyr Gly Gly Tyr Glu Lys Ala  
 165 170 175  
 Ser Lys Arg Met Thr Phe Gln Met Pro Lys Phe Asp Leu Gly Pro Leu  
 180 185 190  
 Leu Ser Glu Pro Leu Val Leu Tyr Asn Gln Asn Leu Ser Asn Arg Pro  
 195 200 205  
 Ser Phe Asn Arg Thr Pro Ile Pro Trp Leu Ser Ser Gly Glu Pro Val  
 210 215 220  
 Asp Tyr Asn Val Asp Ile Gly Ile Pro Leu Asp Gly Glu Thr Glu Glu  
 225 230 235 240  
 Leu

&lt;210&gt; 586

&lt;211&gt; 241

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 586

Met Phe Lys Leu Arg Gln Met Arg Val Glu Lys Phe Ile Tyr Glu Asn  
 1 5 10 15  
 His Pro Asp Val Phe Ser Asp Ser Ser Met Asp His Phe Gln Lys Phe  
 20 25 30  
 Leu Pro Thr Val Gly Gly Gln Leu Gly Thr Ala Gly Gln Gly Phe Ser  
 35 40 45  
 Tyr Ser Lys Ser Asn Gly Arg Gly Gly Ser Gln Ala Gly Gly Ser Gly  
 50 55 60  
 Ser Ala Gly Gln Tyr Gly Ser Asp Gln Gln His His Leu Gly Ser Gly  
 65 70 75 80  
 Ser Gly Ala Gly Gly Thr Gly Gly Pro Ala Gly Gln Ala Gly Arg Gly  
 85 90 95  
 Gly Ala Ala Gly Thr Ala Gly Val Gly Glu Thr Gly Ser Gly Asp Gln  
 100 105 110

Ala Gly Gly Glu Gly Lys His Ile Thr Val Phe Lys Thr Tyr Ile Ser  
 115 120 125

Pro Trp Glu Arg Ala Met Gly Val Asp Pro Gln Gln Lys Met Glu Leu  
 130 135 140

Gly Ile Asp Leu Leu Ala Tyr Gly Ala Lys Ala Glu Leu Pro Lys Tyr  
 145 150 155 160

Lys Ser Phe Asn Arg Thr Ala Met Pro Tyr Gly Gly Tyr Glu Lys Ala  
 165 170 175

Ser Lys Arg Met Thr Phe Gln Met Pro Lys Phe Asp Leu Gly Pro Leu  
 180 185 190

Leu Ser Glu Pro Leu Val Leu Tyr Asn Gln Asn Leu Ser Asn Arg Pro  
 195 200 205

Ser Phe Asn Arg Thr Pro Ile Pro Trp Leu Ser Ser Gly Glu Pro Val  
 210 215 220

Asp Tyr Asn Val Asp Ile Gly Ile Pro Leu Asp Gly Glu Thr Glu Glu  
 225 230 235 240

Leu

<210> 587  
 <211> 17  
 <212> PRT  
 <213> Homo sapiens

<400> 587  
 Arg Phe Pro Ile Ser Pro His Pro Tyr Gln His Ala Phe Leu Phe Phe  
 1 5 10 15

Phe

<210> 588  
 <211> 39  
 <212> PRT  
 <213> Homo sapiens

<400> 588  
 Leu Arg Val Ala Val Gly Leu Cys Pro Arg Asp Ala Leu Leu Leu Ser  
 1 5 10 15

Pro Pro Arg Val Val Val Cys Gly Val Thr Asp Val Val Val Asp Lys  
 20 25 30

Gly Val Gly Leu Leu Val Val  
 35



<210> 589  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (5)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 589  
 Met Arg Val Thr Xaa Ser Ser His Pro Cys Gln Arg Leu Val Leu Gln  
           1                          5                          10                          15  
 Cys Ser Gly Phe Trp Leu Phe  
                           20

<210> 590  
 <211> 27  
 <212> PRT  
 <213> Homo sapiens

<400> 590  
 Met Arg Val Thr Val Ser Ser His Pro Cys Gln Arg Leu Val Leu Ser  
           1                          5                          10                          15  
 Val Phe Trp Leu Leu Ala Ile Leu Ile Gly Val  
                           20                          25

<210> 591  
 <211> 55  
 <212> PRT  
 <213> Homo sapiens

<400> 591  
 Met Glu Ser Ser Thr Gly Lys Ala Ser Pro Arg Cys His Ile His Cys  
           1                          5                          10                          15  
 Val Pro Pro Phe Pro Pro Pro Cys Pro Val Lys Arg Val Gly Arg Leu  
                           20                          25                          30  
 Phe Leu Phe Phe Gln His Phe Pro Gln Gly Thr Val Ile Ile Pro Leu  
           35                          40                          45  
 Met Pro Ser Pro Pro Leu Asp  
           50                          55

<210> 592  
 <211> 314  
 <212> PRT  
 <213> Homo sapiens

<220>

&lt;221&gt; SITE

&lt;222&gt; (129)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 592

Tyr Ser Lys Thr His Ser Ile Lys Ser Ala Gln Pro Gly Val Pro Thr  
 1 5 10 15

Ser Ala Arg Ser Pro Arg Gln Pro Ser Pro Gly Pro Thr Pro Pro Pro  
 20 25 30

Phe Pro Gly Asn Arg Gly Thr Ala Leu Gly Gly Gly Ser Ile Arg Gln  
 35 40 45

Ser Pro Leu Ser Ser Ser Ser Pro Phe Ser Asn Arg Pro Pro Leu Pro  
 50 55 60

Pro Thr Pro Ser Arg Ala Leu Asp Asp Lys Pro Pro Pro Pro Pro Pro  
 65 70 75 80

Pro Val Gly Asn Arg Pro Ser Ile His Arg Glu Ala Val Pro Pro Pro  
 85 90 95

Pro Pro Gln Asn Asn Lys Pro Pro Val Pro Ser Thr Pro Arg Pro Ser  
 100 105 110

Ala Ala Ser Gln Ala Pro Pro Pro Pro Pro Pro Ser Arg Pro Gly  
 115 120 125

Xaa Pro Pro Leu Pro Pro Ser Ser Ser Gly Asn Asp Glu Thr Pro Arg  
 130 135 140

Leu Pro Gln Arg Asn Leu Ser Leu Ser Ser Ser Thr Pro Pro Leu Pro  
 145 150 155 160

Ser Pro Gly Arg Ser Gly Pro Leu Pro Pro Pro Pro Ser Glu Arg Pro  
 165 170 175

Pro Pro Pro Val Arg Asp Pro Pro Gly Arg Ser Gly Pro Leu Pro Pro  
 180 185 190

Pro Pro Pro Val Ser Arg Asn Gly Ser Thr Ser Arg Ala Leu Pro Ala  
 195 200 205

Thr Pro Gln Leu Pro Ser Arg Ser Gly Val Asp Ser Pro Arg Ser Gly  
 210 215 220

Pro Arg Pro Pro Leu Pro Pro Asp Arg Pro Ser Ala Gly Ala Pro Pro  
 225 230 235 240

Pro Pro Pro Pro Ser Thr Ser Ile Arg Asn Gly Phe Gln Asp Ser Pro  
 245 250 255

Cys Glu Asp Glu Trp Glu Ser Arg Phe Tyr Phe His Pro Ile Ser Asp  
 260 265 270

Leu Pro Pro Pro Glu Pro Tyr Val Gln Thr Thr Lys Ser Tyr Pro Ser  
 275 280 285

Lys Leu Ala Arg Asn Glu Ser Arg Ser Gly Ser Asn Arg Arg Glu Arg

290

295

300

Gly Ala Pro Pro Leu Pro Pro Ile Pro Arg  
305 310

<210> 593  
<211> 55  
<212> PRT  
<213> Homo sapiens

<400> 593  
Met Glu Ser Ser Thr Gly Lys Ala Ser Pro Arg Cys His Ile His Cys  
1 5 10 15  
Val Pro Pro Phe Pro Pro Pro Cys Pro Val Lys Arg Val Gly Arg Leu  
20 25 30  
Phe Leu Phe Phe Gln His Phe Pro Gln Gly Thr Val Ile Ile Pro Leu  
35 40 45  
Met Pro Ser Pro Pro Leu Asp  
50 55

<210> 594  
<211> 53  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (23)  
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 594  
Phe Ile Ile His Ser Ile Ser Pro Val Ala Leu Asn Pro Gln Ala His  
1 5 10 15  
Asp Leu Pro Phe Ser Leu Xaa Ser Cys Val Ser Val Phe Asn Leu Arg  
20 25 30  
Ser Phe Pro Thr Met Asp Ser Cys Thr Thr Leu Asn Glu Thr Ser Ile  
35 40 45  
Phe Gln Arg Arg Val  
50

<210> 595  
<211> 261  
<212> PRT  
<213> Homo sapiens

<400> 595  
Gly Ile Phe Arg Ser Leu Arg Val Leu Phe Pro Leu Phe Ser Val Gly  
1 5 10 15

Arg Pro Gln Phe Ala Arg Ser Leu Ser Ala Ala Pro Gln Leu Ser Asp  
                   20                                  25                                  30  
 Thr Ala Asp Thr Met Gly Phe Gly Asp Leu Lys Ser Pro Ala Gly Leu  
                   35                                  40                                  45  
 Gln Val Leu Asn Asp Tyr Leu Ala Asp Lys Ser Tyr Ile Glu Gly Tyr  
                   50                                  55                                  60  
 Val Pro Ser Gln Ala Asp Val Ala Val Phe Glu Ala Val Ser Ser Pro  
                   65                                  70                                  75                                  80  
 Pro Pro Ala Asp Leu Cys His Ala Leu Arg Trp Tyr Asn His Ile Lys  
                                   85                                  90                                  95  
 Ser Tyr Glu Lys Glu Lys Ala Ser Leu Pro Gly Val Lys Lys Ala Leu  
                                   100                                  105                                  110  
 Gly Lys Tyr Gly Pro Ala Asp Val Glu Asp Thr Thr Gly Ser Gly Ala  
                                   115                                  120                                  125  
 Thr Asp Ser Lys Asp Asp Asp Asp Ile Asp Leu Phe Gly Ser Asp Asp  
                   130                                  135                                  140  
 Glu Glu Glu Ser Glu Glu Ala Lys Arg Leu Arg Glu Glu Arg Leu Ala  
                   145                                  150                                  155                                  160  
 Gln Tyr Glu Ser Lys Lys Ala Lys Lys Pro Ala Leu Val Ala Lys Ser  
                                   165                                  170                                  175  
 Ser Ile Leu Leu Asp Val Lys Pro Trp Asp Asp Glu Thr Asp Met Ala  
                                   180                                  185                                  190  
 Lys Leu Glu Glu Cys Val Arg Ser Ile Gln Ala Asp Gly Leu Val Trp  
                   195                                  200                                  205  
 Gly Ser Ser Lys Leu Val Pro Val Gly Tyr Gly Ile Lys Lys Leu Gln  
                   210                                  215                                  220  
 Ile Gln Cys Val Val Glu Asp Asp Lys Val Gly Thr Asp Met Leu Glu  
                   225                                  230                                  235                                  240  
 Glu Gln Ile Thr Ala Phe Glu Asp Tyr Val Gln Ser Met Asp Val Ala  
                                   245                                  250                                  255  
 Ala Phe Asn Lys Ile  
                                   260

&lt;210&gt; 596

&lt;211&gt; 44

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 596

Met Lys Lys Glu Met Val Leu Leu Thr Thr Thr Tyr Phe Ser Leu His  
           1                                  5                                  10                                  15

Val Lys Val Phe Phe Cys Leu Phe Val Cys Phe Ser Ile Leu Ser Ser  
                   20                                  25                                  30

Ser Arg Arg Gly Ser Leu Ala Asn Asn Ser Ser Trp  
                   35                                  40

<210> 597

<211> 44

<212> PRT

<213> Homo sapiens

<400> 597

Met Lys Lys Glu Met Val Leu Leu Thr Thr Thr Tyr Phe Ser Leu His  
   1                                  5                                  10                                  15

Val Lys Val Phe Phe Cys Leu Phe Val Cys Phe Ser Ile Leu Ser Ser  
                   20                                  25                                  30

Ser Arg Arg Gly Ser Leu Ala Asn Asn Ser Ser Trp  
                   35                                  40

<210> 598

<211> 42

<212> PRT

<213> Homo sapiens

<400> 598

Met Phe Thr Leu Leu Leu Ser Ser Phe Phe Leu Gln His Cys Leu Gln  
   1                                  5                                  10                                  15

Asn Asn Leu Tyr Ala Ser Glu Arg Glu Gln Ile Phe Ser Asn Phe Leu  
                   20                                  25                                  30

Gln Leu Ser Ser Leu Lys Arg Arg Ile Cys  
                   35                                  40

<210> 599

<211> 6

<212> PRT

<213> Homo sapiens

<400> 599

Leu Leu Leu Ser Ser Phe  
   1                                  5

<210> 600

<211> 42

<212> PRT

<213> Homo sapiens

<400> 600

Met Phe Thr Leu Leu Leu Ser Ser Phe Phe Leu Gln His Cys Leu Gln

1	5	10	15
Asn Asn Leu Tyr Ala Ser Glu Arg Glu Gln Ile Phe Ser Asn Phe Leu			
20	25	30	
Gln Leu Ser Ser Leu Lys Arg Arg Ile Cys			
35	40		

<210> 601  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (6)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (21)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (31)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (76)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 601
Leu Gly Ser Pro Glu Xaa Ala Gln Lys Val Asp Ile Thr Ser Ala His
1 5 10 15
Phe Ile Gly Gln Xaa Ser Arg Pro Ser Asp Phe Ala Gln Val Xaa Ser
20 25 30
Leu Glu Gly Ser Arg Pro Val Ile Trp Ser Leu Asn Gly Trp Thr Leu
35 40 45
Lys Glu Thr Pro Arg Ala Asp Gly Val Phe Thr Glu Thr Ala Gly Gln
50 55 60
Gly Leu Gly Thr Ala Gln Gly His Leu Leu Trp Xaa Ala Ala Ala Thr
65 70 75 80
Gly Ser Pro Asp Cys Ser
85

<210> 602  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 602

Met Gly Val Ala Leu Pro Ser Pro Leu Leu Cys Ser Leu Pro Leu Phe  
 1 5 10 15

Leu Leu Phe Gly Asp Val Ser Gly Ser Ser Ser Leu Leu Ala Leu Leu  
 20 25 30

Pro Phe Leu His Pro Trp His His Pro Ser Leu Ser  
 35 40

&lt;210&gt; 603

&lt;211&gt; 44

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 603

Met Gly Val Ala Leu Pro Ser Pro Leu Leu Cys Ser Leu Pro Leu Phe  
 1 5 10 15

Leu Leu Phe Gly Asp Val Ser Gly Ser Ser Ser Leu Leu Ala Leu Leu  
 20 25 30

Pro Phe Leu His Pro Trp His His Pro Ser Leu Ser  
 35 40

&lt;210&gt; 604

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 604

Met Leu Ser Ala Val Leu Thr Met Leu Arg Phe Ile Ile Ala Phe Ser  
 1 5 10 15

Leu Leu Phe Cys Ser Cys Ser Thr Asp Lys His Cys Thr Trp Tyr His  
 20 25 30

Ala Leu Pro His Phe Lys Lys Ile Cys Leu Thr Glu Arg Lys Lys Met  
 35 40 45

Trp Phe Gly Leu Ala Ala Val Leu Ile Tyr Gly Ile  
 50 55 60

&lt;210&gt; 605

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 605

Ile Thr Phe Ser Cys Phe Phe Cys Asn Asn Cys Ser Gln Val Asn Leu  
 1 5 10 15

Gln

<210> 606  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 606  
 Met Leu Ser Ala Val Leu Thr Met Leu Arg Phe Ile Ile Ala Phe Ser  
     1                    5                    10                    15  
 Leu Leu Phe Cys Ser Cys Ser Thr Asp Lys His Cys Thr Trp Tyr His  
           20                    25                    30  
 Ala Leu Pro His Phe Lys Lys Ile Cys Leu Thr Glu Arg Lys Lys Met  
           35                    40                    45  
 Trp Phe Gly Leu Ala Ala Val Leu Ile Tyr Gly Ile  
     50                    55                    60

<210> 607  
 <211> 97  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (87)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (92)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 607  
 Leu Gly Ala Glu His Phe Lys Cys Ile Thr Trp Val Ala Gly Trp Ala  
     1                    5                    10                    15  
 Val Pro Gly Leu Lys Gly Val Gly Ser Phe Phe Gln Gly Ala Pro Ser  
           20                    25                    30  
 Ala Ser Trp His Arg Thr Leu Ala Pro Ala His Pro Lys Leu Thr Leu  
           35                    40                    45  
 Val Gly Val Gly Pro Leu Thr Gln Thr Trp Pro Leu Pro Ser Leu Val  
     50                    55                    60  
 Leu Leu Pro Gln Leu Ser Pro Val Cys Gly Arg Val Cys Leu Asp Arg  
     65                    70                    75                    80  
 Leu Trp Ala Gly Gln Gly Xaa Gly Gln Ala Glu Xaa Glu Phe Val Leu  
           85                    90                    95  
 Gly



&lt;210&gt; 608

&lt;211&gt; 318

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 608

Met Arg Leu Leu Ala Gly Trp Leu Cys Leu Ser Leu Ala Ser Val Trp  
 1 5 10 15

Leu Ala Arg Arg Met Trp Thr Leu Arg Ser Pro Leu Thr Arg Ser Leu  
 20 25 30

Tyr Val Asn Met Thr Ser Gly Pro Gly Gly Pro Ala Ala Ala Ala Gly  
 35 40 45

Gly Arg Lys Glu Asn His Gln Trp Tyr Val Cys Asn Arg Glu Lys Leu  
 50 55 60

Cys Glu Ser Leu Gln Ala Val Phe Val Gln Ser Tyr Leu Asp Gln Gly  
 65 70 75 80

Thr Gln Ile Phe Leu Asn Asn Ser Ile Glu Lys Ser Gly Trp Leu Phe  
 85 90 95

Ile Gln Leu Tyr His Ser Phe Val Ser Ser Val Phe Ser Leu Phe Met  
 100 105 110

Ser Arg Thr Ser Ile Asn Gly Leu Leu Gly Arg Gly Ser Met Phe Val  
 115 120 125

Phe Ser Pro Asp Gln Phe Gln Arg Leu Leu Lys Ile Asn Pro Asp Trp  
 130 135 140

Lys Thr His Arg Leu Leu Asp Leu Gly Ala Gly Asp Gly Glu Val Thr  
 145 150 155 160

Lys Ile Met Ser Pro His Phe Glu Glu Ile Tyr Ala Thr Glu Leu Ser  
 165 170 175

Glu Thr Met Ile Trp Gln Leu Gln Lys Lys Lys Tyr Arg Val Leu Gly  
 180 185 190

Ile Asn Glu Trp Gln Asn Thr Gly Phe Gln Tyr Asp Val Ile Ser Cys  
 195 200 205

Leu Asn Leu Leu Asp Arg Cys Asp Gln Pro Leu Thr Leu Leu Lys Asp  
 210 215 220

Ile Arg Ser Val Leu Glu Pro Thr Arg Gly Arg Val Ile Leu Ala Leu  
 225 230 235 240

Val Leu Pro Phe His Pro Tyr Val Glu Asn Val Gly Gly Lys Trp Glu  
 245 250 255

Lys Pro Ser Glu Ile Leu Glu Ile Lys Gly Gln Asn Trp Glu Glu Gln  
 260 265 270

Val Asn Ser Leu Pro Glu Val Phe Arg Lys Ala Gly Phe Val Ile Glu  
275 280 285

Ala Phe Thr Arg Leu Pro Tyr Leu Cys Glu Gly Asp Met Tyr Asn Asp  
290 295 300

Tyr Tyr Val Leu Asp Asp Ala Val Phe Val Leu Lys Pro Val  
305 310 315

<210> 609

<211> 318

<212> PRT

<213> Homo sapiens

<400> 609

Met Arg Leu Leu Ala Gly Trp Leu Cys Leu Ser Leu Ala Ser Val Trp  
1 5 10 15

Leu Ala Arg Arg Met Trp Thr Leu Arg Ser Pro Leu Thr Arg Ser Leu  
20 25 30

Tyr Val Asn Met Thr Ser Gly Pro Gly Gly Pro Ala Ala Ala Ala Gly  
35 40 45

Gly Arg Lys Glu Asn His Gln Trp Tyr Val Cys Asn Arg Glu Lys Leu  
50 55 60

Cys Glu Ser Leu Gln Ala Val Phe Val Gln Ser Tyr Leu Asp Gln Gly  
65 70 75 80

Thr Gln Ile Phe Leu Asn Asn Ser Ile Glu Lys Ser Gly Trp Leu Phe  
85 90 95

Ile Gln Leu Tyr His Ser Phe Val Ser Ser Val Phe Ser Leu Phe Met  
100 105 110

Ser Arg Thr Ser Ile Asn Gly Leu Leu Gly Arg Gly Ser Met Phe Val  
115 120 125

Phe Ser Pro Asp Gln Phe Gln Arg Leu Leu Lys Ile Asn Pro Asp Trp  
130 135 140

Lys Thr His Arg Leu Leu Asp Leu Gly Ala Gly Asp Gly Glu Val Thr  
145 150 155 160

Lys Ile Met Ser Pro His Phe Glu Glu Ile Tyr Ala Thr Glu Leu Ser  
165 170 175

Glu Thr Met Ile Trp Gln Leu Gln Lys Lys Lys Tyr Arg Val Leu Gly  
180 185 190

Ile Asn Glu Trp Gln Asn Thr Gly Phe Gln Tyr Asp Val Ile Ser Cys  
195 200 205

Leu Asn Leu Leu Asp Arg Cys Asp Gln Pro Leu Thr Leu Leu Lys Asp  
210 215 220

Ile Arg Ser Val Leu Glu Pro Thr Arg Gly Arg Val Ile Leu Ala Leu

225		230		235		240
Val Leu Pro Phe His Pro Tyr Val Glu Asn Val Gly Gly Lys Trp Glu						
		245		250		255
Lys Pro Ser Glu Ile Leu Glu Ile Lys Gly Gln Asn Trp Glu Glu Gln						
		260		265		270
Val Asn Ser Leu Pro Glu Val Phe Arg Lys Ala Gly Phe Val Ile Glu						
		275		280		285
Ala Phe Thr Arg Leu Pro Tyr Leu Cys Glu Gly Asp Met Tyr Asn Ala						
		290		295		300
Tyr Tyr Val Leu Asp Asp Ala Val Phe Val Leu Lys Pro Val						
		305		310		315

&lt;210&gt; 610

&lt;211&gt; 195

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (159)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (175)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 610

Met Trp Thr Leu Phe Ala Leu Ser Gly Pro Leu Phe Leu Phe Gln Val
1 5 10 15

Leu Thr Phe Met Ile Tyr Ile Val Ser Thr Val Phe Cys Gly His Leu
20 25 30

Gly Lys Val Glu Leu Ala Ser Val Thr Leu Ala Val Ala Phe Val Asn
35 40 45

Val Cys Gly Val Ser Val Gly Val Gly Leu Ser Ser Ala Cys Asp Thr
50 55 60

Leu Met Ser Gln Ser Phe Gly Ser Pro Asn Lys Lys His Val Gly Val
65 70 75 80

Ile Leu Gln Arg Gly Ala Leu Val Leu Leu Leu Cys Cys Leu Pro Cys
85 90 95

Trp Ala Leu Phe Leu Asn Thr Gln His Ile Leu Leu Leu Phe Arg Gln
100 105 110

Asp Pro Asp Val Ser Arg Leu Thr Gln Asp Tyr Val Met Ile Phe Ile
115 120 125

Pro Gly Leu Pro Val Ile Phe Leu Tyr Asn Leu Leu Ala Lys Tyr Leu
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130 135 140

Gln Asn Gln Val Gln Val Phe Ser Val Trp Gly Gly Pro Ser Xaa Ser  
 145 150 155 160

Thr Leu Pro Tyr Ser Ser Gly Arg Gly Ala Trp Gly Phe Pro Xaa Leu  
 165 170 175

Ser Thr Ile Cys Glu Pro Ala Leu Glu Arg Gly Ser Leu Pro Thr His  
 180 185 190

Leu Pro Tyr  
 195

<210> 611  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<400> 611

Leu Ala Gly Pro Val Phe Ile Tyr Phe Arg Arg Ser Pro Gly Pro Lys  
 1 5 10 15

Ser Ser Val Val Trp Trp Ala Thr Val Ser Thr Val Trp Pro Thr Met  
 20 25 30

Pro Trp Phe Leu Cys  
 35

<210> 612  
 <211> 3  
 <212> PRT  
 <213> Homo sapiens

<400> 612

Ile Pro Gly  
 1

<210> 613  
 <211> 180  
 <212> PRT  
 <213> Homo sapiens

<400> 613

Met Trp Thr Leu Phe Ala Leu Ser Gly Pro Leu Phe Leu Phe Gln Val  
 1 5 10 15

Leu Thr Phe Met Ile Tyr Ile Val Ser Thr Val Phe Cys Gly His Leu  
 20 25 30

Gly Lys Val Glu Leu Ala Ser Val Thr Leu Ala Val Ala Phe Val Asn  
 35 40 45

Val Cys Gly Val Ser Val Gly Val Gly Leu Ser Ser Ala Cys Asp Thr

50                      55                      60  
 Leu Met Ser Gln Ser Phe Gly Ser Pro Asn Lys Lys His Val Gly Val  
 65                      70                      75                      80  
 Ile Leu Gln Arg Gly Ala Leu Val Leu Leu Cys Cys Leu Pro Cys  
                     85                      90                      95  
 Trp Ala Leu Phe Leu Asn Thr Gln His Ile Leu Leu Leu Phe Arg Gln  
                     100                      105                      110  
 Asp Pro Asp Val Ser Arg Leu Thr Gln Asp Tyr Val Met Ile Phe Ile  
                     115                      120                      125  
 Pro Gly Leu Pro Val Ile Phe Leu Tyr Asn Leu Leu Ala Lys Tyr Leu  
                     130                      135                      140  
 Gln Asn Gln Val Gln Val Phe Glu Cys Val Gly Arg Pro Phe Ser Gln  
 145                      150                      155                      160  
 His Thr Ala Leu Phe Gln Trp Glu Gly Gly Leu Gly Leu Ser Pro Ser  
                     165                      170                      175  
 Leu His His Leu  
                     180

<210> 614  
 <211> 38  
 <212> PRT  
 <213> Homo sapiens

<400> 614  
 Glu Lys Lys Lys Lys Lys Lys Lys Arg Pro Gly Ala Val Ala His Ala  
 1                      5                      10                      15  
 Leu Ile Pro Ala Leu Trp Glu Thr Glu Ala Gly Gly Ser Pro Glu Val  
                     20                      25                      30  
 Gly Ser Ser Arg Pro Ala  
                     35

<210> 615  
 <211> 18  
 <212> PRT  
 <213> Homo sapiens

<400> 615  
 Met Val Arg Thr Leu Ser Leu Ala Val Leu Ser Trp Leu Pro Ala Ala  
 1                      5                      10                      15  
 Val Cys

<210> 616

<211> 18  
 <212> PRT  
 <213> Homo sapiens

<400> 616

Met Val Arg Thr Leu Ser Leu Ala Val Leu Ser Trp Leu Pro Ala Ala  
 1 5 10 15

Val Cys

<210> 617  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 617

Met Leu Leu Ser Trp Thr Val Leu Ile Ile Ile Leu Pro Phe Ala Gly  
 1 5 10 15

Asp Val Ser Ser His Leu Cys Ile Leu Arg Pro Phe Ala Gly Ser Val  
 20 25 30

Ser Ser Cys Leu Ser Asn Phe Lys Arg Ile  
 35 40

<210> 618  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 618

Met Leu Leu Ser Trp Thr Val Leu Ile Ile Ile Leu Pro Phe Ala Gly  
 1 5 10 15

Asp Val Ser Ser His Leu Cys Ile Leu Arg Pro Phe Ala Gly Ser Val  
 20 25 30

Ser Ser Cys Leu Ser Asn Phe Lys Arg Ile  
 35 40

<210> 619  
 <211> 93  
 <212> PRT  
 <213> Homo sapiens

<400> 619

Ser Ala Ser Cys Trp Asn Ala Asn Phe Leu Pro Arg Asn Gln Gly Arg  
 1 5 10 15

Lys Leu His Cys Cys Ala Lys Lys Lys Lys Lys Pro Ser Leu His Thr  
 20 25 30

Leu Lys Pro Phe Leu Asn Pro Ser Arg Glu Ser Thr Val Ala Ser Ser

35                                      40                                      45  
 Thr Thr Ala Ile Gly Phe Ala Ser Val Met Cys Ser Tyr Leu Leu Asp  
     50                                      55                                      60  
 Phe Gln Asn Ile Lys Lys Lys Lys Arg Ala Ala Ala Leu Glu Asp Pro  
     65                                      70                                      75                                      80  
 Ser Leu Arg Thr Arg Ala Cys Asp Asn Ile Ala Arg Arg  
                                     85                                      90

<210> 620  
 <211> 403  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (175)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (320)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (331)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (368)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 620  
 Met Ala Thr Ala Glu Arg Arg Ala Leu Gly Ile Gly Phe Gln Trp Leu  
     1                                      5                                      10                                      15  
 Ser Leu Ala Thr Leu Val Leu Ile Cys Ala Gly Gln Gly Gly Arg Arg  
                                     20                                      25                                      30  
 Glu Asp Gly Gly Pro Ala Cys Tyr Gly Gly Phe Asp Leu Tyr Phe Ile  
                                     35                                      40                                      45  
 Leu Asp Lys Ser Gly Ser Val Leu His His Trp Asn Glu Ile Tyr Tyr  
     50                                      55                                      60  
 Phe Val Glu Gln Leu Ala His Lys Phe Ile Ser Pro Gln Leu Arg Met  
     65                                      70                                      75                                      80  
 Ser Phe Ile Val Phe Ser Thr Arg Gly Thr Thr Leu Met Lys Leu Thr  
                                     85                                      90                                      95  
 Glu Asp Arg Glu Gln Ile Arg Gln Gly Leu Glu Glu Leu Gln Lys Val  
     100                                      105                                      110

Leu Pro Gly Gly Asp Thr Tyr Met His Glu Gly Phe Glu Arg Ala Ser  
 115 120 125  
 Glu Gln Ile Tyr Tyr Glu Asn Arg Gln Gly Tyr Arg Thr Ala Ser Val  
 130 135 140  
 Ile Ile Ala Leu Thr Asp Gly Glu Leu His Glu Asp Leu Phe Phe Tyr  
 145 150 155 160  
 Ser Glu Arg Glu Ala Asn Arg Ser Arg Asp Leu Gly Ala Ile Xaa Tyr  
 165 170 175  
 Cys Val Gly Val Lys Asp Phe Asn Glu Thr Gln Leu Ala Arg Ile Ala  
 180 185 190  
 Asp Ser Lys Asp His Val Phe Pro Val Asn Asp Gly Phe Gln Ala Leu  
 195 200 205  
 Gln Gly Ile Ile His Ser Ile Leu Lys Lys Ser Cys Ile Glu Ile Leu  
 210 215 220  
 Ala Ala Glu Pro Ser Thr Ile Cys Ala Gly Glu Ser Phe Gln Val Val  
 225 230 235 240  
 Val Arg Gly Asn Gly Phe Arg His Ala Arg Asn Val Asp Arg Val Leu  
 245 250 255  
 Cys Ser Phe Lys Ile Asn Asp Ser Val Thr Leu Asn Glu Lys Pro Phe  
 260 265 270  
 Ser Val Glu Asp Thr Tyr Leu Leu Cys Pro Ala Pro Ile Leu Lys Glu  
 275 280 285  
 Val Gly Met Lys Ala Ala Leu Gln Val Ser Met Asn Asp Gly Leu Ser  
 290 295 300  
 Phe Ile Ser Ser Ser Val Ile Ile Thr Thr Thr His Cys Ser Asp Xaa  
 305 310 315 320  
 Ser Ile Leu Ala Ile Ala Leu Leu Ile Leu Xaa Leu Leu Leu Ala Leu  
 325 330 335  
 Ala Leu Leu Trp Trp Phe Trp Pro Leu Cys Cys Thr Val Ile Ile Lys  
 340 345 350  
 Glu Val Pro Pro Pro Pro Ala Glu Glu Ser Glu Val Ser Asp His Xaa  
 355 360 365  
 Arg Met Ala Val Gly Gly Gln Gly Gly Arg Val Gly Trp Arg Ala Gly  
 370 375 380  
 Trp Ala Ala Gly His Leu Ala Pro Cys Arg Ala Glu Leu Ser Gln Ala  
 385 390 395 400  
 Gln Arg Ile

&lt;210&gt; 621



&lt;211&gt; 403

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 621

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Met Ala Thr Ala Glu Arg Arg Ala Leu Gly Ile Gly Phe Gln Trp Leu
 1           5           10           15

Ser Leu Ala Thr Leu Val Leu Ile Cys Ala Gly Gln Gly Gly Arg Arg
      20           25           30

Glu Asp Gly Gly Pro Ala Cys Tyr Gly Gly Phe Asp Leu Tyr Phe Ile
      35           40           45

Leu Asp Lys Ser Gly Ser Val Leu His His Trp Asn Glu Ile Tyr Tyr
      50           55           60

Phe Val Glu Gln Leu Ala His Lys Phe Ile Ser Pro Gln Leu Arg Met
      65           70           75           80

Ser Phe Ile Val Phe Ser Thr Arg Gly Thr Thr Leu Met Lys Leu Thr
      85           90           95

Glu Asp Arg Glu Gln Ile Arg Gln Gly Leu Glu Glu Leu Gln Lys Val
      100           105           110

Leu Pro Gly Gly Asp Thr Tyr Met His Glu Gly Phe Glu Arg Ala Ser
      115           120           125

Glu Gln Ile Tyr Tyr Glu Asn Arg Gln Gly Tyr Arg Thr Ala Ser Val
      130           135           140

Ile Ile Ala Leu Thr Asp Gly Glu Leu His Glu Asp Leu Phe Phe Tyr
      145           150           155           160

Ser Glu Arg Glu Ala Asn Arg Ser Arg Asp Leu Gly Ala Ile Val Tyr
      165           170           175

Cys Val Gly Val Lys Asp Phe Asn Glu Thr Gln Leu Ala Arg Ile Ala
      180           185           190

Asp Ser Lys Asp His Val Phe Pro Val Asn Asp Gly Phe Gln Ala Leu
      195           200           205

Gln Gly Ile Ile His Ser Ile Leu Lys Lys Ser Cys Ile Glu Ile Leu
      210           215           220

Ala Ala Glu Pro Ser Thr Ile Cys Ala Gly Glu Ser Phe Gln Val Val
      225           230           235           240

Val Arg Gly Asn Gly Phe Arg His Ala Arg Asn Val Asp Arg Val Leu
      245           250           255

Cys Ser Phe Lys Ile Asn Asp Ser Val Thr Leu Asn Glu Lys Pro Phe
      260           265           270

Ser Val Glu Asp Thr Tyr Leu Leu Cys Pro Ala Pro Ile Leu Lys Glu
      275           280           285

Val Gly Met Lys Ala Ala Leu Gln Val Ser Met Asn Asp Gly Leu Ser

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290		295		300
Phe Ile Ser Ser Ser Val Ile Ile Thr Thr Thr His Cys Ser Asp Gly				
305		310		315 320
Ser Ile Leu Ala Ile Ala Leu Leu Ile Leu Phe Leu Leu Leu Ala Leu				
	325		330	335
Ala Leu Leu Trp Trp Phe Trp Pro Leu Cys Cys Thr Val Ile Ile Lys				
	340		345	350
Glu Val Pro Pro Pro Pro Ala Glu Glu Ser Glu Val Ser Asp His Ser				
	355		360	365
Arg Met Ala Val Gly Gly Gln Gly Gly Arg Val Gly Trp Arg Ala Gly				
	370		375	380
Trp Ala Ala Gly His Leu Ala Pro Cys Arg Ala Glu Leu Ser Gln Ala				
385		390		395 400
Gln Arg Ile				

&lt;210&gt; 622

&lt;211&gt; 156

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (102)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 622

Val Val Lys Ile Thr His Cys Pro Thr Leu Leu Thr Arg Asp Gly Asp
1 5 10 15

Arg Ile Arg Ser Asn Gly Lys Phe Gly Gly Leu Gln Asn Lys Ala Pro
20 25 30

Pro Met Asp Lys Leu Arg Gly Met Val Phe Gly Ala Pro Val Pro Lys
35 40 45

Gln Cys Leu Ile Leu Gly Glu Gln Ile Asp Leu Leu Gln Gln Tyr Arg
50 55 60

Ser Ala Val Cys Lys Leu Asp Ser Val Asn Lys Asp Leu Asn Ser Gln
65 70 75 80

Leu Glu Tyr Leu Arg Thr Pro Asp Met Arg Lys Lys Lys Gln Glu Leu
85 90 95

Asp Glu His Glu Lys Xaa Leu Lys Leu Ile Glu Glu Lys Leu Gly Met
100 105 110

Thr Pro Ile Arg Lys Cys Asn Asp Ser Leu Arg His Ser Pro Lys Val
115 120 125

Glu Thr Thr Asp Cys Pro Val Pro Pro Lys Arg Met Arg Arg Glu Ala  
 130 135 140

Thr Arg Gln Asn Arg Ile Ile Thr Lys Thr Asp Val  
 145 150 155

<210> 623

<211> 175

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (91)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (173)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (174)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (175)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 623

Val Phe Gly Met Leu Leu Gly Asp Thr Ile Ile Leu Asp Asn Leu Asp  
 1 5 10 15

Ala Ala Asn His Tyr Arg Lys Glu Val Val Lys Ile Thr His Cys Pro  
 20 25 30

Thr Leu Leu Thr Arg Asp Gly Asp Arg Ile Arg Ser Asn Gly Lys Phe  
 35 40 45

Gly Gly Leu Gln Asn Lys Ala Pro Pro Met Asp Lys Leu Arg Gly Met  
 50 55 60

Val Phe Gly Ala Pro Val Pro Lys Gln Cys Leu Ile Leu Gly Glu Gln  
 65 70 75 80

Ile Asp Leu Leu Gln Gln Tyr Arg Ser Ala Xaa Cys Lys Leu Asp Ser  
 85 90 95

Val Asn Lys Asp Leu Asn Ser Gln Leu Glu Tyr Leu Arg Thr Pro Asp  
 100 105 110

Met Arg Lys Lys Lys Gln Glu Leu Asp Glu His Glu Lys Asn Leu Lys  
 115 120 125

Leu Ile Glu Glu Lys Leu Gly Met Thr Pro Ile Arg Lys Cys Asn Asp  
 130 135 140

Ser Leu Arg His Ser Pro Lys Val Glu Thr Thr Asp Cys Pro Val Pro  
 145 150 155 160

Pro Lys Arg Met Arg Arg Glu Ala Gly Asp Lys Arg Xaa Xaa Xaa  
 165 170 175

<210> 624

<211> 24

<212> PRT

<213> Homo sapiens

<400> 624

Met Trp His Leu Trp Arg Arg Leu Leu Ser Cys Phe Pro Val Ala Met  
 1 5 10 15

Leu Gln Asp Tyr Lys Tyr Ser Val  
 20

<210> 625

<211> 20

<212> PRT

<213> Homo sapiens

<400> 625

Ser Cys Leu Pro Val Gly Thr Asp Pro Gln Gln Met Gln Lys His Leu  
 1 5 10 15

Val Val Ile Lys  
 20

<210> 626

<211> 24

<212> PRT

<213> Homo sapiens

<400> 626

Met Trp His Leu Trp Arg Arg Leu Leu Ser Cys Phe Pro Val Ala Met  
 1 5 10 15

Leu Gln Asp Tyr Lys Tyr Ser Val  
 20

<210> 627

<211> 439

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (358)

<223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 627

Met Val Pro Ser Ser Pro Arg Ala Leu Phe Leu Leu Leu Leu Ile Leu  
 1 5 10 15

Ala Cys Pro Glu Pro Arg Ala Ser Gln Asn Cys Leu Ser Lys Gln Gln  
 20 25 30

Leu Leu Ser Ala Ile Arg Gln Leu Gln Gln Leu Leu Lys Gly Gln Glu  
 35 40 45

Thr Arg Phe Ala Glu Gly Ile Arg His Met Lys Ser Arg Leu Ala Ala  
 50 55 60

Leu Gln Asn Ser Val Gly Arg Val Gly Pro Asp Ala Leu Pro Val Ser  
 65 70 75 80

Cys Pro Ala Leu Asn Thr Pro Ala Asp Gly Arg Lys Phe Gly Ser Lys  
 85 90 95

Tyr Leu Val Asp His Glu Val His Phe Thr Cys Asn Pro Gly Phe Arg  
 100 105 110

Leu Val Gly Pro Ser Ser Val Val Cys Leu Pro Asn Gly Thr Trp Thr  
 115 120 125

Gly Glu Gln Pro His Cys Arg Gly Ile Ser Glu Cys Ser Ser Gln Pro  
 130 135 140

Cys Gln Asn Gly Gly Thr Cys Val Glu Gly Val Asn Gln Tyr Arg Cys  
 145 150 155 160

Ile Cys Pro Pro Gly Arg Thr Gly Asn Arg Cys Gln His Gln Ala Gln  
 165 170 175

Thr Ala Ala Pro Glu Gly Ser Val Ala Gly Asp Ser Ala Phe Ser Arg  
 180 185 190

Ala Pro Arg Cys Ala Gln Val Glu Arg Ala Gln His Cys Ser Cys Glu  
 195 200 205

Ala Gly Phe His Leu Ser Gly Ala Ala Gly Asp Ser Val Cys Gln Asp  
 210 215 220

Val Asn Glu Cys Glu Leu Tyr Gly Gln Glu Gly Arg Pro Arg Leu Cys  
 225 230 235 240

Met His Ala Cys Val Asn Thr Pro Gly Ser Tyr Arg Cys Thr Cys Pro  
 245 250 255

Gly Gly Tyr Arg Thr Leu Ala Asp Gly Lys Ser Cys Glu Asp Val Asp  
 260 265 270

Glu Cys Val Gly Leu Gln Pro Val Cys Pro Gln Gly Thr Thr Cys Ile  
 275 280 285

Asn Thr Gly Gly Ser Phe Gln Cys Val Ser Pro Glu Cys Pro Glu Gly  
 290 295 300

Ser Gly Asn Val Ser Tyr Val Lys Thr Ser Pro Phe Gln Cys Glu Arg

305                                      310                                      315                                      320  
 Asn Pro Cys Pro Met Asp Ser Arg Pro Cys Arg His Leu Pro Lys Thr  
    325                                      330                                      335  
 Ile Ser Phe His Tyr Leu Ser Leu Pro Ser Asn Leu Lys Thr Pro Ile  
    340                                      345                                      350  
 Thr Leu Phe Arg Met Xaa Thr Ala Ser Ala Pro Gly Arg Ala Gly Pro  
    355                                      360                                      365  
 Asn Ser Leu Arg Phe Gly Ile Val Gly Gly Asn Ser Arg Gly His Phe  
    370                                      375                                      380  
 Val Met Gln Arg Ser Asp Arg Gln Thr Gly Asp Leu Ile Leu Val Gln  
    385                                      390                                      395                                      400  
 Asn Leu Glu Gly Pro Gln Thr Leu Glu Val Asp Val Asp Met Ser Glu  
    405                                      410                                      415  
 Tyr Leu Asp Arg Ser Phe Gln Ala Asn His Val Ser Lys Val Thr Ile  
    420                                      425                                      430  
 Phe Val Ser Pro Tyr Asp Phe  
    435

&lt;210&gt; 628

&lt;211&gt; 439

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 628

Met Val Pro Ser Ser Pro Arg Ala Leu Phe Leu Leu Leu Leu Ile Leu  
   1  5  10  15  
 Ala Cys Pro Glu Pro Arg Ala Ser Gln Asn Cys Leu Ser Lys Gln Gln  
   20  25  30  
 Leu Leu Ser Ala Ile Arg Gln Leu Gln Gln Leu Leu Lys Gly Gln Glu  
   35  40  45  
 Thr Arg Phe Ala Glu Gly Ile Arg His Met Lys Ser Arg Leu Ala Ala  
   50  55  60  
 Leu Gln Asn Ser Val Gly Arg Val Gly Pro Asp Ala Leu Pro Val Ser  
   65  70  75  80  
 Cys Pro Ala Leu Asn Thr Pro Ala Asp Gly Arg Lys Phe Gly Ser Lys  
   85  90  95  
 Tyr Leu Val Asp His Glu Val His Phe Thr Cys Asn Pro Gly Phe Arg  
   100  105  110  
 Leu Val Gly Pro Ser Ser Val Val Cys Leu Pro Asn Gly Thr Trp Thr  
   115  120  125  
 Gly Glu Gln Pro His Cys Arg Gly Ile Ser Glu Cys Ser Ser Gln Pro  
   130  135  140

Cys Gln Asn Gly Gly Thr Cys Val Glu Gly Val Asn Gln Tyr Arg Cys  
 145 150 155 160  
 Ile Cys Pro Pro Gly Arg Thr Gly Asn Arg Cys Gln His Gln Ala Gln  
 165 170 175  
 Thr Ala Ala Pro Glu Gly Ser Val Ala Gly Asp Ser Ala Phe Ser Arg  
 180 185 190  
 Ala Pro Arg Cys Ala Gln Val Glu Arg Ala Gln His Cys Ser Cys Glu  
 195 200 205  
 Ala Gly Phe His Leu Ser Gly Ala Ala Gly Asp Ser Val Cys Gln Asp  
 210 215 220  
 Val Asn Glu Cys Glu Leu Tyr Gly Gln Glu Gly Arg Pro Arg Leu Cys  
 225 230 235 240  
 Met His Ala Cys Val Asn Thr Pro Gly Ser Tyr Arg Cys Thr Cys Pro  
 245 250 255  
 Gly Gly Tyr Arg Thr Leu Ala Asp Gly Lys Ser Cys Glu Asp Val Asp  
 260 265 270  
 Glu Cys Val Gly Leu Gln Pro Val Cys Pro Gln Gly Thr Thr Cys Ile  
 275 280 285  
 Asn Thr Gly Gly Ser Phe Gln Cys Val Ser Pro Glu Cys Pro Glu Gly  
 290 295 300  
 Ser Gly Asn Val Ser Tyr Val Lys Thr Ser Pro Phe Gln Cys Glu Arg  
 305 310 315 320  
 Asn Pro Cys Pro Met Asp Ser Arg Pro Cys Arg His Leu Pro Lys Thr  
 325 330 335  
 Ile Ser Phe His Tyr Leu Ser Leu Pro Ser Asn Leu Lys Thr Pro Ile  
 340 345 350  
 Thr Leu Phe Arg Met Ala Thr Ala Ser Ala Pro Gly Arg Ala Gly Pro  
 355 360 365  
 Asn Ser Leu Arg Phe Gly Ile Val Gly Gly Asn Ser Arg Gly His Phe  
 370 375 380  
 Val Met Gln Arg Ser Asp Arg Gln Thr Gly Asp Leu Ile Leu Val Gln  
 385 390 395 400  
 Asn Leu Glu Gly Pro Gln Thr Leu Glu Val Asp Val Asp Met Ser Glu  
 405 410 415  
 Tyr Leu Asp Arg Ser Phe Gln Ala Asn His Val Ser Lys Val Thr Ile  
 420 425 430  
 Phe Val Ser Pro Tyr Asp Phe  
 435

<210> 629  
 <211> 32  
 <212> PRT  
 <213> Homo sapiens

<400> 629  
 Trp Asn Pro Ile Ser Met Lys Asn Lys Leu Lys Ile Leu Lys Ile Lys  
     1                    5                    10                    15  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Gly Arg Pro  
                     20                    25                    30

<210> 630  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 630  
 Pro Ala Pro Leu Pro Leu Arg Trp Ser Pro Ala Gly Pro Gly Gln  
     1                    5                    10                    15

<210> 631  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

<400> 631  
 Met Ala Pro Ala Cys Gln Ile Leu Arg Trp Ala Leu Ala Leu Gly Leu  
     1                    5                    10                    15  
 Gly Leu Met Phe Glu Val Thr His Ala Phe Arg Ser Gln Gly Arg Gly  
                     20                    25                    30  
 Ser Leu Val Val Ala Val Gly Arg Glu Arg Lys Met  
                     35                    40

<210> 632  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

<400> 632  
 Met Ala Pro Ala Cys Gln Ile Leu Arg Trp Ala Leu Ala Leu Gly Leu  
     1                    5                    10                    15  
 Gly Leu Met Phe Glu Val Thr His Ala Phe Arg Ser Gln Gly Arg Gly  
                     20                    25                    30  
 Ser Leu Val Val Ala Val Gly Arg Glu Arg Lys Met  
                     35                    40



<210> 633  
<211> 42  
<212> PRT  
<213> Homo sapiens

<400> 633  
Met Phe Lys Lys Asp Leu Ile Cys Lys Arg Trp Ser Phe Phe Phe Trp  
1 5 10 15  
Gly Leu Leu Ile Ser Val Val Ile Leu Thr Ser Phe Ser Asn Tyr Ser  
20 25 30  
Arg Arg Phe Tyr Leu Asp Leu Tyr Phe Ser  
35 40

<210> 634  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 634  
Phe Ile Gly Phe Ile Leu Cys  
1 5

<210> 635  
<211> 42  
<212> PRT  
<213> Homo sapiens

<400> 635  
Met Phe Lys Lys Asp Leu Ile Cys Lys Arg Trp Ser Phe Phe Phe Trp  
1 5 10 15  
Gly Leu Leu Ile Ser Val Val Ile Leu Thr Ser Phe Ser Asn Tyr Ser  
20 25 30  
Arg Arg Phe Tyr Leu Asp Leu Tyr Phe Ser  
35 40

<210> 636  
<211> 93  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (13)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (39)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 636

Trp Phe Gln Thr Val Asp Arg His Cys Phe Val Leu Xaa Thr Asp Lys  
1 5 10 15

Val Lys Leu Thr Trp Arg Asp Arg Phe Pro Ala Tyr Leu Thr Asn Leu  
20 25 30

Val Ser Ile Ile Phe Met Xaa Ser Ser Arg Arg Leu Arg Pro Asp Glu  
35 40 45

Val Arg Gly Asn Arg Lys Glu Val Ile Gly Phe Ser Arg Ala Trp Trp  
50 55 60

Phe Thr Thr Val Ile Pro Ala Leu Trp Glu Ala Glu Ala Gly Arg Ser  
65 70 75 80

Leu Glu Val Arg Ser Ser Arg Pro Ala Trp Pro Ile Trp  
85 90

<210> 637

<211> 35

<212> PRT

<213> Homo sapiens

<400> 637

Met Ser Leu Gly Phe Trp Val Trp Leu Pro Ser Cys Cys His Lys Met  
1 5 10 15

Leu Val Val Thr Cys Thr Phe Gly His Tyr Leu Pro Leu Glu Ser Ser  
20 25 30

His His Leu  
35

<210> 638

<211> 35

<212> PRT

<213> Homo sapiens

<400> 638

Met Ser Leu Gly Phe Trp Val Trp Leu Pro Ser Cys Cys His Lys Met  
1 5 10 15

Leu Val Val Thr Cys Thr Phe Gly His Tyr Leu Pro Leu Glu Ser Ser  
20 25 30

His His Leu  
35

<210> 639

<211> 394

<212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 639

Val Thr Thr Leu Phe Leu Gly Pro Cys Tyr Cys Arg Gly Arg Leu His  
 1 5 10 15  
 Gly Leu Arg Gln Glu Ser Arg Leu Gly Asp Arg Ser Leu Val Ile Gly  
 20 25 30  
 Ala Gly Ala Cys Tyr Cys Ile Tyr Arg Leu Thr Arg Gly Arg Lys Gln  
 35 40 45  
 Asn Lys Glu Lys Met Ala Glu Gly Gly Ser Gly Asp Val Asp Asp Ala  
 50 55 60  
 Gly Asp Cys Ser Gly Ala Arg Tyr Asn Asp Trp Ser Asp Asp Asp Asp  
 65 70 75 80  
 Asp Ser Asn Glu Ser Lys Ser Ile Val Trp Tyr Pro Pro Trp Ala Arg  
 85 90 95  
 Ile Gly Thr Glu Ala Gly Thr Arg Ala Arg Ala Arg Ala Arg Ala Arg  
 100 105 110  
 Ala Thr Arg Ala Arg Arg Ala Val Gln Lys Arg Ala Ser Pro Asn Ser  
 115 120 125  
 Asp Asp Thr Val Leu Ser Pro Gln Glu Leu Gln Lys Val Leu Cys Leu  
 130 135 140  
 Val Glu Met Ser Glu Lys Pro Tyr Ile Leu Glu Ala Ala Leu Ile Ala  
 145 150 155 160  
 Leu Gly Asn Asn Ala Ala Tyr Ala Phe Asn Arg Asp Ile Ile Arg Asp  
 165 170 175  
 Leu Gly Gly Leu Pro Ile Val Ala Lys Ile Leu Asn Thr Arg Asp Pro  
 180 185 190  
 Ile Val Lys Glu Lys Ala Leu Ile Val Leu Asn Asn Leu Ser Val Asn  
 195 200 205  
 Ala Glu Asn Gln Arg Arg Leu Lys Val Tyr Met Asn Gln Val Cys Asp  
 210 215 220  
 Asp Thr Ile Thr Ser Arg Leu Asn Ser Ser Val Gln Leu Ala Gly Leu  
 225 230 235 240  
 Arg Leu Leu Thr Asn Met Thr Val Thr Asn Glu Tyr Gln His Met Leu  
 245 250 255  
 Ala Asn Ser Ile Ser Asp Phe Phe Arg Leu Phe Ser Ala Gly Asn Glu  
 260 265 270  
 Glu Thr Lys Leu Gln Val Leu Lys Leu Leu Leu Asn Leu Ala Glu Asn  
 275 280 285  
 Pro Ala Met Thr Arg Glu Leu Leu Arg Ala Gln Val Pro Ser Ser Leu  
 290 295 300

Gly Ser Leu Phe Asn Lys Lys Glu Asn Lys Glu Val Ile Leu Lys Leu  
 305 310 315 320  
 Leu Val Ile Phe Glu Asn Ile Asn Asp Asn Phe Lys Trp Glu Glu Asn  
 325 330 335  
 Glu Pro Thr Gln Asn Gln Phe Gly Glu Gly Ser Leu Phe Phe Phe Leu  
 340 345 350  
 Lys Glu Phe Gln Val Cys Ala Asp Lys Val Leu Gly Ile Glu Ser His  
 355 360 365  
 His Asp Phe Leu Val Lys Val Lys Val Gly Lys Phe Met Ala Lys Leu  
 370 375 380  
 Ala Glu His Met Phe Pro Lys Ser Gln Glu  
 385 390

<210> 640  
 <211> 49  
 <212> PRT  
 <213> Homo sapiens

<400> 640  
 Met Ser Pro Arg Pro Leu Ile Ala Arg Cys Glu Ala Leu Gly Cys Gly  
 1 5 10 15  
 Ala Arg Arg Leu Pro Trp Trp Ala Leu Ala Met Ala Leu Cys Ala Cys  
 20 25 30  
 Gly Arg Cys Val Ala Ala Asn Ser Ile Gly Glu Thr Leu Pro Ser Glu  
 35 40 45

Val

<210> 641  
 <211> 49  
 <212> PRT  
 <213> Homo sapiens

<400> 641  
 Met Ser Pro Arg Pro Leu Ile Ala Arg Cys Glu Ala Leu Gly Cys Gly  
 1 5 10 15  
 Ala Arg Arg Leu Pro Trp Trp Ala Leu Ala Met Ala Leu Cys Ala Cys  
 20 25 30  
 Gly Arg Cys Val Ala Ala Asn Ser Ile Gly Glu Thr Leu Pro Ser Glu  
 35 40 45

Val

<210> 642  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 642  
 Pro Ser Val Ala Leu Cys Trp Ile Phe Phe Ile Pro Leu Gly Lys Trp  
           1                  5                  10                  15  
 Glu Phe Phe Tyr Arg Pro Ala Ile Leu Leu Leu Cys Gln Ile Ala Leu  
                   20                  25                  30  
 Tyr Tyr Gln Asp Thr Pro Met Ala His Phe Arg Leu Thr Glu Leu Phe  
           35                  40                  45  
 Leu Tyr Glu Cys Thr Val Val Ile Phe Trp Ala Val Cys Glu Phe Leu  
           50                  55                  60  
 Val Thr His Pro Leu Thr Thr Lys Ala Leu Ser Glu Gln Tyr Lys Ser  
           65                  70                  75                  80  
 Ile Lys Ala Gln Ile  
                   85

<210> 643  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (8)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (33)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 643  
 Met Val Gly Leu Pro Ala Val Xaa Gln Leu Phe Trp Gly Leu Cys Leu  
           1                  5                  10                  15  
 Cys Thr Cys Gly Leu Tyr Pro Ala Pro Gln Ser Trp Leu Ser Ser Gly  
                   20                  25                  30  
 Xaa Tyr Lys Val Thr Ser Gly Ala Pro Ser Glu Arg Met Trp Pro Gln  
           35                  40                  45  
 Arg His Ala Ser Gly Phe Arg Leu Ser Gly Arg Thr Cys Leu Arg Ala  
           50                  55                  60  
 Thr Ala Pro Ser Pro Ser Phe Pro Phe Phe Ser Ala Val Ile Asn Leu  
           65                  70                  75                  80  
 Ser Ala Cys Ser Lys  
                   85

<210> 644  
 <211> 54  
 <212> PRT  
 <213> Homo sapiens

<400> 644  
 Met Val Gly Leu Pro Ala Val Val Gln Leu Phe Trp Gly Leu Cys Leu  
           1                  5                  10                  15  
 Cys Thr Cys Gly Ala Val Ser Cys Pro Thr Glu Leu Ala Val Gln Trp  
                   20                  25                  30  
 Arg Ile Gln Ser Asp Ile Trp Cys Ser Leu Arg Lys Asn Val Ala Pro  
           35                  40                  45  
 Glu Ala Cys Gln Trp Leu  
           50

<210> 645  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (67)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (76)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (81)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 645  
 Met Ile Leu Gly Ile His Trp Gly Ile Phe Leu Leu Leu Leu Leu Ser  
           1                  5                  10                  15  
 Trp Leu Glu Leu Gln Arg Thr Val Ile Phe Phe Phe Ser Pro Phe Pro  
                   20                  25                  30  
 Ile Gln Lys His Tyr Thr Leu Gly His Phe Ser Phe Ser Gln Arg Arg  
           35                  40                  45  
 Phe Met Asp Ser Gln Thr Glu Leu Cys Ala Thr Gly Lys Val Lys Arg  
           50                  55                  60  
 Glu Lys Xaa Ala Asp Glu Val Thr Trp Leu His Xaa Leu His His Ala  
           65                  70                  75                  80

Xaa

<210> 646  
 <211> 73  
 <212> PRT  
 <213> Homo sapiens

<400> 646  
 Ile Phe Leu Leu Leu Leu Leu Ser Trp Leu Glu Leu Gln Arg Thr Val  
   1                  5                  10                  15  
 Ile Phe Phe Phe Ser Pro Phe Pro Ile Gln Lys His Tyr Thr Leu Gly  
                   20                  25                  30  
 His Phe Ser Phe Ser Gln Arg Arg Phe Met Asp Ser Gln Thr Glu Leu  
           35                  40                  45  
 Cys Ala Thr Gly Lys Val Lys Arg Glu Lys Ala Ala Asp Glu Val Thr  
       50                  55                  60  
 Trp Leu His Val Leu His His Ala Glu  
   65                  70

<210> 647  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 647  
 Trp Gly Leu Leu Tyr Leu Glu Leu Asn  
   1                  5

<210> 648  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<400> 648  
 Met Ile Leu Gly Ile His Trp Gly Ile Phe Leu Leu Leu Leu Leu Ser  
   1                  5                  10                  15  
 Trp Leu Glu Leu Gln Arg Thr Val Ile Phe Phe Phe Ser Pro Phe Pro  
                   20                  25                  30  
 Ile Gln Lys His Tyr Thr Leu Gly His Phe Ser Phe Ser Gln Arg Arg  
       35                  40                  45  
 Phe Met Asp Ser Gln Thr Glu Leu Cys Ala Thr Gly Lys Val Lys Arg  
       50                  55                  60  
 Glu Lys Ala Ala Asp Glu Val Thr Trp Leu His Val Leu His His Ala  
   65                  70                  75                  80  
 Glu

<210> 649  
 <211> 870  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (534)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 649  
 Met Gly Pro Pro Ser Leu Val Leu Cys Leu Leu Ser Ala Thr Val Phe  
           1                  5                  10                  15  
 Ser Leu Leu Gly Gly Ser Ser Ala Phe Leu Ser His His Arg Leu Lys  
                   20                  25                  30  
 Gly Arg Phe Gln Arg Asp Arg Arg Asn Ile Arg Pro Asn Ile Ile Leu  
                   35                  40                  45  
 Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser Met Gln Val Met  
           50                  55                  60  
 Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly Ala His Phe Ile Asn  
           65                  70                  75                  80  
 Ala Phe Val Thr Thr Pro Met Cys Cys Pro Ser Arg Ser Ser Ile Leu  
                   85                  90                  95  
 Thr Gly Lys Tyr Val His Asn His Asn Thr Tyr Thr Asn Asn Glu Asn  
                   100                  105                  110  
 Cys Ser Ser Pro Ser Trp Gln Ala Gln His Glu Ser Arg Thr Phe Ala  
           115                  120                  125  
 Val Tyr Leu Asn Ser Thr Gly Tyr Arg Thr Ala Phe Phe Gly Lys Tyr  
           130                  135                  140  
 Leu Asn Glu Tyr Asn Gly Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp  
           145                  150                  155                  160  
 Val Gly Leu Leu Lys Asn Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg  
                   165                  170                  175  
 Asn Gly Val Lys Glu Lys His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu  
                   180                  185                  190  
 Thr Asp Leu Ile Thr Asn Asp Ser Val Ser Phe Phe Arg Thr Ser Lys  
           195                  200                  205  
 Lys Met Tyr Pro His Arg Pro Val Leu Met Val Ile Ser His Ala Ala  
           210                  215                  220  
 Pro His Gly Pro Glu Asp Ser Ala Pro Gln Tyr Ser Arg Leu Phe Pro  
           225                  230                  235                  240  
 Asn Ala Ser Gln His Ile Thr Pro Ser Tyr Asn Tyr Ala Pro Asn Pro



245										250					255				
Asp	Lys	His	Trp	Ile	Met	Arg	Tyr	Thr	Gly	Pro	Met	Lys	Pro	Ile	His				
260										265					270				
Met	Glu	Phe	Thr	Asn	Met	Leu	Gln	Arg	Lys	Arg	Leu	Gln	Thr	Leu	Met				
275										280					285				
Ser	Val	Asp	Asp	Ser	Met	Glu	Thr	Ile	Tyr	Asn	Met	Leu	Val	Glu	Thr				
290										295					300				
Gly	Glu	Leu	Asp	Asn	Thr	Tyr	Ile	Val	Tyr	Thr	Ala	Asp	His	Gly	Tyr				
305										310					315				
His	Ile	Gly	Gln	Phe	Gly	Leu	Val	Lys	Gly	Lys	Ser	Met	Pro	Tyr	Glu				
										325					330				
Phe	Asp	Ile	Arg	Val	Pro	Phe	Tyr	Val	Arg	Gly	Pro	Asn	Val	Glu	Ala				
										340					345				
Gly	Cys	Leu	Asn	Pro	His	Ile	Val	Leu	Asn	Ile	Asp	Leu	Ala	Pro	Thr				
355										360					365				
Ile	Leu	Asp	Ile	Ala	Gly	Leu	Asp	Ile	Pro	Ala	Asp	Met	Asp	Gly	Lys				
370										375					380				
Ser	Ile	Leu	Lys	Leu	Leu	Asp	Thr	Glu	Arg	Pro	Val	Asn	Arg	Phe	His				
385										390					395				
Leu	Lys	Lys	Lys	Met	Arg	Val	Trp	Arg	Asp	Ser	Phe	Leu	Val	Glu	Arg				
										405					410				
Gly	Lys	Leu	Leu	His	Lys	Arg	Asp	Asn	Asp	Lys	Val	Asp	Ala	Gln	Glu				
										420					425				
Glu	Asn	Phe	Leu	Pro	Lys	Tyr	Gln	Arg	Val	Lys	Asp	Leu	Cys	Gln	Arg				
										435					440				
Ala	Glu	Tyr	Gln	Thr	Ala	Cys	Glu	Gln	Leu	Gly	Gln	Lys	Trp	Gln	Cys				
450										455					460				
Val	Glu	Asp	Ala	Thr	Gly	Lys	Leu	Lys	Leu	His	Lys	Cys	Lys	Gly	Pro				
465										470					475				
Met	Arg	Leu	Gly	Gly	Ser	Arg	Ala	Leu	Ser	Asn	Leu	Val	Pro	Lys	Tyr				
										485					490				
Tyr	Gly	Gln	Gly	Ser	Glu	Ala	Cys	Thr	Cys	Asp	Ser	Gly	Asp	Tyr	Lys				
										500					505				
Leu	Ser	Leu	Ala	Gly	Arg	Arg	Lys	Lys	Leu	Phe	Lys	Lys	Lys	Tyr	Lys				
515										520					525				
Ala	Ser	Tyr	Val	Arg	Xaa	Arg	Ser	Ile	Arg	Ser	Val	Ala	Ile	Glu	Val				
530										535					540				
Asp	Gly	Arg	Val	Tyr	His	Val	Gly	Leu	Gly	Asp	Ala	Ala	Gln	Pro	Arg				
545										550					555				
Asn	Leu	Thr	Lys	Arg	His	Trp	Pro	Gly	Ala	Pro	Glu	Asp	Gln	Asp	Asp				

565										570					575				
Lys	Asp	Gly	Gly	Asp	Phe	Ser	Gly	Thr	Gly	Gly	Leu	Pro	Asp	Tyr	Ser				
			580						585					590					
Ala	Ala	Asn	Pro	Ile	Lys	Val	Thr	His	Arg	Cys	Tyr	Ile	Leu	Glu	Asn				
		595					600					605							
Asp	Thr	Val	Gln	Cys	Asp	Leu	Asp	Leu	Tyr	Lys	Ser	Leu	Gln	Ala	Trp				
	610					615					620								
Lys	Asp	His	Lys	Leu	His	Ile	Asp	His	Glu	Ile	Glu	Thr	Leu	Gln	Asn				
625					630					635					640				
Lys	Ile	Lys	Asn	Leu	Arg	Glu	Val	Arg	Gly	His	Leu	Lys	Lys	Lys	Arg				
			645						650					655					
Pro	Glu	Glu	Cys	Asp	Cys	His	Lys	Ile	Ser	Tyr	His	Thr	Gln	His	Lys				
			660					665					670						
Gly	Arg	Leu	Lys	His	Arg	Gly	Ser	Ser	Leu	His	Pro	Phe	Arg	Lys	Gly				
		675					680					685							
Leu	Gln	Glu	Lys	Asp	Lys	Val	Trp	Leu	Leu	Arg	Glu	Gln	Lys	Arg	Lys				
	690					695					700								
Lys	Lys	Leu	Arg	Lys	Leu	Leu	Lys	Arg	Leu	Gln	Asn	Asn	Asp	Thr	Cys				
705					710					715					720				
Ser	Met	Pro	Gly	Leu	Thr	Cys	Phe	Thr	His	Asp	Asn	Gln	His	Trp	Gln				
				725					730					735					
Thr	Ala	Pro	Phe	Trp	Thr	Leu	Gly	Pro	Phe	Cys	Ala	Cys	Thr	Ser	Ala				
			740					745					750						
Asn	Asn	Asn	Thr	Tyr	Trp	Cys	Met	Arg	Thr	Ile	Asn	Glu	Thr	His	Asn				
		755					760					765							
Phe	Leu	Phe	Cys	Glu	Phe	Ala	Thr	Gly	Phe	Leu	Glu	Tyr	Phe	Asp	Leu				
	770					775					780								
Asn	Thr	Asp	Pro	Tyr	Gln	Leu	Met	Asn	Ala	Val	Asn	Thr	Leu	Asp	Arg				
785					790					795					800				
Asp	Val	Leu	Asn	Gln	Leu	His	Val	Gln	Leu	Met	Glu	Leu	Arg	Ser	Cys				
			805					810						815					
Lys	Gly	Tyr	Lys	Gln	Cys	Asn	Pro	Arg	Thr	Arg	Asn	Met	Asp	Leu	Gly				
			820					825					830						
Leu	Lys	Asp	Gly	Gly	Ser	Tyr	Glu	Gln	Tyr	Arg	Gln	Phe	Gln	Arg	Arg				
		835					840					845							
Lys	Trp	Pro	Glu	Met	Lys	Arg	Pro	Ser	Ser	Lys	Ser	Leu	Gly	Gln	Leu				
	850					855					860								
Trp	Glu	Gly	Trp	Glu	Gly														
865					870														

&lt;210&gt; 650

&lt;211&gt; 870

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 650

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Met Gly Pro Pro Ser Leu Val Leu Cys Leu Leu Ser Ala Thr Val Phe
 1              5              10              15

Ser Leu Leu Gly Gly Ser Ser Ala Phe Leu Ser His His Arg Leu Lys
          20              25              30

Gly Arg Phe Gln Arg Asp Arg Arg Asn Ile Arg Pro Asn Ile Ile Leu
          35              40              45

Val Leu Thr Asp Asp Gln Asp Val Glu Leu Gly Ser Met Gln Val Met
 50              55              60

Asn Lys Thr Arg Arg Ile Met Glu Gln Gly Gly Ala His Phe Ile Asn
 65              70              75              80

Ala Phe Val Thr Thr Pro Met Cys Cys Pro Ser Arg Ser Ser Ile Leu
          85              90              95

Thr Gly Lys Tyr Val His Asn His Asn Thr Tyr Thr Asn Asn Glu Asn
          100              105              110

Cys Ser Ser Pro Ser Trp Gln Ala Gln His Glu Ser Arg Thr Phe Ala
          115              120              125

Val Tyr Leu Asn Ser Thr Gly Tyr Arg Thr Ala Phe Phe Gly Lys Tyr
          130              135              140

Leu Asn Glu Tyr Asn Gly Ser Tyr Val Pro Pro Gly Trp Lys Glu Trp
          145              150              155              160

Val Gly Leu Leu Lys Asn Ser Arg Phe Tyr Asn Tyr Thr Leu Cys Arg
          165              170              175

Asn Gly Val Lys Glu Lys His Gly Ser Asp Tyr Ser Lys Asp Tyr Leu
          180              185              190

Thr Asp Leu Ile Thr Asn Asp Ser Val Ser Phe Phe Arg Thr Ser Lys
          195              200              205

Lys Met Tyr Pro His Arg Pro Val Leu Met Val Ile Ser His Ala Ala
          210              215              220

Pro His Gly Pro Glu Asp Ser Ala Pro Gln Tyr Ser Arg Leu Phe Pro
          225              230              235              240

Asn Ala Ser Gln His Ile Thr Pro Ser Tyr Asn Tyr Ala Pro Asn Pro
          245              250              255

Asp Lys His Trp Ile Met Arg Tyr Thr Gly Pro Met Lys Pro Ile His
          260              265              270

Met Glu Phe Thr Asn Met Leu Gln Arg Lys Arg Leu Gln Thr Leu Met
          275              280              285

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Ser Val Asp Asp Ser Met Glu Thr Ile Tyr Asn Met Leu Val Glu Thr  
 290 295 300  
 Gly Glu Leu Asp Asn Thr Tyr Ile Val Tyr Thr Ala Asp His Gly Tyr  
 305 310 315 320  
 His Ile Gly Gln Phe Gly Leu Val Lys Gly Lys Ser Met Pro Tyr Glu  
 325 330 335  
 Phe Asp Ile Arg Val Pro Phe Tyr Val Arg Gly Pro Asn Val Glu Ala  
 340 345 350  
 Gly Cys Leu Asn Pro His Ile Val Leu Asn Ile Asp Leu Ala Pro Thr  
 355 360 365  
 Ile Leu Asp Ile Ala Gly Leu Asp Ile Pro Ala Asp Met Asp Gly Lys  
 370 375 380  
 Ser Ile Leu Lys Leu Leu Asp Thr Glu Arg Pro Val Asn Arg Phe His  
 385 390 395 400  
 Leu Lys Lys Lys Met Arg Val Trp Arg Asp Ser Phe Leu Val Glu Arg  
 405 410 415  
 Gly Lys Leu Leu His Lys Arg Asp Asn Asp Lys Val Asp Ala Gln Glu  
 420 425 430  
 Glu Asn Phe Leu Pro Lys Tyr Gln Arg Val Lys Asp Leu Cys Gln Arg  
 435 440 445  
 Ala Glu Tyr Gln Thr Ala Cys Glu Gln Leu Gly Gln Lys Trp Gln Cys  
 450 455 460  
 Val Glu Asp Ala Thr Gly Lys Leu Lys Leu His Lys Cys Lys Gly Pro  
 465 470 475 480  
 Met Arg Leu Gly Gly Ser Arg Ala Leu Ser Asn Leu Val Pro Lys Tyr  
 485 490 495  
 Tyr Gly Gln Gly Ser Glu Ala Cys Thr Cys Asp Ser Gly Asp Tyr Lys  
 500 505 510  
 Leu Ser Leu Ala Gly Arg Arg Lys Lys Leu Phe Lys Lys Lys Tyr Lys  
 515 520 525  
 Ala Ser Tyr Val Arg Ser Arg Ser Ile Arg Ser Val Ala Ile Glu Val  
 530 535 540  
 Asp Gly Arg Val Tyr His Val Gly Leu Gly Asp Ala Ala Gln Pro Arg  
 545 550 555 560  
 Asn Leu Thr Lys Arg His Trp Pro Gly Ala Pro Glu Asp Gln Asp Asp  
 565 570 575  
 Lys Asp Gly Gly Asp Phe Ser Gly Thr Gly Gly Leu Pro Asp Tyr Ser  
 580 585 590  
 Ala Ala Asn Pro Ile Lys Val Thr His Arg Cys Tyr Ile Leu Glu Asn  
 595 600 605

Asp Thr Val Gln Cys Asp Leu Asp Leu Tyr Lys Ser Leu Gln Ala Trp  
 610 615 620  
 Lys Asp His Lys Leu His Ile Asp His Glu Ile Glu Thr Leu Gln Asn  
 625 630 635 640  
 Lys Ile Lys Asn Leu Arg Glu Val Arg Gly His Leu Lys Lys Lys Arg  
 645 650 655  
 Pro Glu Glu Cys Asp Cys His Lys Ile Ser Tyr His Thr Gln His Lys  
 660 665 670  
 Gly Arg Leu Lys His Arg Gly Ser Ser Leu His Pro Phe Arg Lys Gly  
 675 680 685  
 Leu Gln Glu Lys Asp Lys Val Trp Leu Leu Arg Glu Gln Lys Arg Lys  
 690 695 700  
 Lys Lys Leu Arg Lys Leu Leu Lys Arg Leu Gln Asn Asn Asp Thr Cys  
 705 710 715 720  
 Ser Met Pro Gly Leu Thr Cys Phe Thr His Asp Asn Gln His Trp Gln  
 725 730 735  
 Thr Ala Pro Phe Trp Thr Leu Gly Pro Phe Cys Ala Cys Thr Ser Ala  
 740 745 750  
 Asn Asn Asn Thr Tyr Trp Cys Met Arg Thr Ile Asn Glu Thr His Asn  
 755 760 765  
 Phe Leu Phe Cys Glu Phe Ala Thr Gly Phe Leu Glu Tyr Phe Asp Leu  
 770 775 780  
 Asn Thr Asp Pro Tyr Gln Leu Met Asn Ala Val Asn Thr Leu Asp Arg  
 785 790 795 800  
 Asp Val Leu Asn Gln Leu His Val Gln Leu Met Glu Leu Arg Ser Cys  
 805 810 815  
 Lys Gly Tyr Lys Gln Cys Asn Pro Arg Thr Arg Asn Met Asp Leu Gly  
 820 825 830  
 Leu Lys Asp Gly Gly Ser Tyr Glu Gln Tyr Arg Gln Phe Gln Arg Arg  
 835 840 845  
 Lys Trp Pro Glu Met Lys Arg Pro Ser Ser Lys Ser Leu Gly Gln Leu  
 850 855 860  
 Trp Glu Gly Trp Glu Gly  
 865 870

&lt;210&gt; 651

&lt;211&gt; 204

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 651

Met Met Pro Leu Leu Ser Leu Ile Phe Ser Ala Leu Phe Ile Leu Phe  
 1 5 10 15

Gly Thr Val Ile Val Gln Ala Phe Ser Asp Ser Asn Asp Glu Arg Glu  
 20 25 30

Ser Ser Pro Pro Glu Lys Glu Glu Ala Gln Glu Lys Thr Gly Lys Thr  
 35 40 45

Glu Pro Ser Phe Thr Lys Glu Asn Ser Ser Lys Ile Pro Lys Lys Gly  
 50 55 60

Phe Val Glu Val Thr Glu Leu Thr Asp Val Thr Tyr Thr Ser Asn Leu  
 65 70 75 80

Val Arg Leu Arg Pro Gly His Met Asn Val Val Leu Ile Leu Ser Asn  
 85 90 95

Ser Thr Lys Thr Ser Leu Leu Gln Lys Phe Ala Leu Glu Val Tyr Thr  
 100 105 110

Phe Thr Gly Ser Ser Cys Leu His Phe Ser Phe Leu Ser Leu Asp Lys  
 115 120 125

His Arg Glu Trp Leu Glu Tyr Leu Leu Glu Phe Ala Gln Asp Ala Ala  
 130 135 140

Pro Ile Pro Asn Gln Tyr Asp Lys His Phe Met Glu Arg Asp Tyr Thr  
 145 150 155 160

Gly Tyr Val Leu Ala Leu Asn Gly His Lys Lys Tyr Phe Cys Leu Phe  
 165 170 175

Lys Pro Gln Lys Thr Val Glu Glu Glu Glu Ala Ile Gly Ser Cys Ser  
 180 185 190

Asp Val Asp Ser Ser Leu Tyr Leu Gly Glu Ser Arg  
 195 200

&lt;210&gt; 652

&lt;211&gt; 332

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (204)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (283)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (305)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 652

Met Glu Val Arg Lys Leu Ser Ile Ser Trp Gln Phe Leu Ile Val Leu  
 1 5 10 15  
 Val Leu Ile Leu Gln Ile Leu Ser Ala Leu Asp Phe Asp Pro Tyr Arg  
 20 25 30  
 Val Leu Gly Val Ser Arg Thr Ala Ser Gln Ala Asp Ile Lys Lys Ala  
 35 40 45  
 Tyr Lys Lys Leu Ala Arg Glu Trp His Pro Asp Lys Asn Lys Asp Pro  
 50 55 60  
 Gly Ala Glu Asp Lys Phe Ile Gln Ile Ser Lys Ala Tyr Glu Ile Leu  
 65 70 75 80  
 Ser Asn Glu Glu Lys Arg Ser Asn Tyr Asp Gln Tyr Gly Asp Ala Gly  
 85 90 95  
 Glu Asn Gln Gly Tyr Gln Lys Gln Gln Gln Gln Arg Glu Tyr Arg Phe  
 100 105 110  
 Arg His Phe His Glu Asn Phe Tyr Phe Asp Glu Ser Phe Phe His Phe  
 115 120 125  
 Pro Phe Asn Ser Glu Arg Arg Asp Ser Ile Asp Glu Lys Tyr Leu Leu  
 130 135 140  
 His Phe Ser His Tyr Val Asn Glu Val Val Pro Asp Ser Phe Lys Lys  
 145 150 155 160  
 Pro Tyr Leu Ile Lys Ile Thr Ser Asp Trp Cys Phe Ser Cys Ile His  
 165 170 175  
 Ile Glu Pro Val Trp Lys Glu Val Ile Gln Glu Leu Glu Glu Leu Gly  
 180 185 190  
 Val Gly Ile Gly Val Val His Ala Gly Tyr Glu Xaa Arg Leu Ala His  
 195 200 205  
 His Leu Gly Ala His Ser Thr Pro Ser Ile Leu Gly Ile Ile Asn Gly  
 210 215 220  
 Lys Ile Ser Phe Phe His Asn Ala Val Val Arg Glu Asn Leu Arg Gln  
 225 230 235 240  
 Phe Val Glu Ser Leu Leu Pro Gly Asn Leu Val Glu Lys Val Thr Asn  
 245 250 255  
 Lys Asn Tyr Val Arg Phe Leu Ser Gly Trp Gln Gln Glu Asn Lys Pro  
 260 265 270  
 His Val Leu Leu Phe Asp Gln Thr Pro Ile Xaa Pro Leu Leu Tyr Lys  
 275 280 285  
 Leu Thr Ala Phe Ala Tyr Lys Asp Tyr Leu Ser Phe Gly Tyr Val Tyr  
 290 295 300  
 Xaa Gly Leu Arg Gly Thr Glu Glu Met Thr Arg Arg Tyr Asn Ile Asn

305

310

315

320

Ile Tyr Ala Pro Thr Leu Leu Ala Leu Lys Asn Ile  
 325 330

&lt;210&gt; 653

&lt;211&gt; 737

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 653

Met Glu Val Arg Lys Leu Ser Ile Ser Trp Gln Phe Leu Ile Val Leu  
 1 5 10 15

Val Leu Ile Leu Gln Ile Leu Ser Ala Leu Asp Phe Asp Pro Tyr Arg  
 20 25 30

Val Leu Gly Val Ser Arg Thr Ala Ser Gln Ala Asp Ile Lys Lys Ala  
 35 40 45

Tyr Lys Lys Leu Ala Arg Glu Trp His Pro Asp Lys Asn Lys Asp Pro  
 50 55 60

Gly Ala Glu Asp Lys Phe Ile Gln Ile Ser Lys Ala Tyr Glu Ile Leu  
 65 70 75 80

Ser Asn Glu Glu Lys Arg Ser Asn Tyr Asp Gln Tyr Gly Asp Ala Gly  
 85 90 95

Glu Asn Gln Gly Tyr Gln Lys Gln Gln Gln Arg Glu Tyr Arg Phe  
 100 105 110

Arg His Phe His Glu Asn Phe Tyr Phe Asp Glu Ser Phe Phe His Phe  
 115 120 125

Pro Phe Asn Ser Glu Arg Arg Asp Ser Ile Asp Glu Lys Tyr Leu Leu  
 130 135 140

His Phe Ser His Tyr Val Asn Glu Val Val Pro Asp Ser Phe Lys Lys  
 145 150 155 160

Pro Tyr Leu Ile Lys Ile Thr Ser Asp Trp Cys Phe Ser Cys Ile His  
 165 170 175

Ile Glu Pro Val Trp Lys Glu Val Ile Gln Glu Leu Glu Glu Leu Gly  
 180 185 190

Val Gly Ile Gly Val Val His Ala Gly Tyr Glu Arg Arg Leu Ala His  
 195 200 205

His Leu Gly Ala His Ser Thr Pro Ser Ile Leu Gly Ile Ile Asn Gly  
 210 215 220

Lys Ile Ser Phe Phe His Asn Ala Val Val Arg Glu Asn Leu Arg Gln  
 225 230 235 240

Phe Val Glu Ser Leu Leu Pro Gly Asn Leu Val Glu Lys Val Thr Asn  
 245 250 255



Lys Asn Tyr Val Arg Phe Leu Ser Gly Trp Gln Gln Glu Asn Lys Pro  
 260 265 270  
 His Val Leu Leu Phe Asp Gln Thr Pro Ile Val Pro Leu Leu Tyr Lys  
 275 280 285  
 Leu Thr Ala Phe Ala Tyr Lys Asp Tyr Leu Ser Phe Gly Tyr Val Tyr  
 290 295 300  
 Val Gly Leu Arg Gly Thr Glu Glu Met Thr Arg Arg Tyr Asn Ile Asn  
 305 310 315 320  
 Ile Tyr Ala Pro Thr Leu Leu Val Phe Lys Glu His Ile Asn Arg Pro  
 325 330 335  
 Ala Asp Val Ile Gln Ala Arg Gly Met Lys Lys Gln Ile Ile Asp Asp  
 340 345 350  
 Phe Ile Thr Arg Asn Lys Tyr Leu Leu Ala Ala Arg Leu Thr Ser Gln  
 355 360 365  
 Lys Leu Phe His Glu Leu Cys Pro Val Lys Arg Ser His Arg Gln Arg  
 370 375 380  
 Lys Tyr Cys Val Val Leu Leu Thr Ala Glu Thr Thr Lys Leu Ser Lys  
 385 390 395 400  
 Pro Phe Glu Ala Phe Leu Ser Phe Ala Leu Ala Asn Thr Gln Asp Thr  
 405 410 415  
 Val Arg Phe Val His Val Tyr Ser Asn Arg Gln Gln Glu Phe Ala Asp  
 420 425 430  
 Thr Leu Leu Pro Asp Ser Glu Ala Phe Gln Gly Lys Ser Ala Val Ser  
 435 440 445  
 Ile Leu Glu Arg Arg Asn Thr Ala Gly Arg Val Val Tyr Lys Thr Leu  
 450 455 460  
 Glu Asp Pro Trp Ile Gly Ser Glu Ser Asp Lys Phe Ile Leu Leu Gly  
 465 470 475 480  
 Tyr Leu Asp Gln Leu Arg Lys Asp Pro Ala Leu Leu Ser Ser Glu Ala  
 485 490 495  
 Val Leu Pro Asp Leu Thr Asp Glu Leu Ala Pro Val Phe Leu Leu Arg  
 500 505 510  
 Trp Phe Tyr Ser Ala Ser Asp Tyr Ile Ser Asp Cys Trp Asp Ser Ile  
 515 520 525  
 Phe His Asn Asn Trp Arg Glu Met Met Pro Leu Leu Ser Leu Ile Phe  
 530 535 540  
 Ser Ala Leu Phe Ile Leu Phe Gly Thr Val Ile Val Gln Ala Phe Ser  
 545 550 555 560  
 Asp Ser Asn Asp Glu Arg Glu Ser Ser Pro Pro Glu Lys Glu Glu Ala  
 565 570 575

Gln Glu Lys Thr Gly Lys Thr Glu Pro Ser Phe Thr Lys Glu Asn Ser  
 580 585 590  
 Ser Lys Ile Pro Lys Lys Gly Phe Val Glu Val Thr Glu Leu Thr Asp  
 595 600 605  
 Val Thr Tyr Thr Ser Asn Leu Val Arg Leu Arg Pro Gly His Met Asn  
 610 615 620  
 Val Val Leu Ile Leu Ser Asn Ser Thr Lys Thr Ser Leu Leu Gln Lys  
 625 630 635 640  
 Phe Ala Leu Glu Val Tyr Thr Phe Thr Gly Ser Ser Cys Leu His Phe  
 645 650 655  
 Ser Phe Leu Ser Leu Asp Lys His Arg Glu Trp Leu Glu Tyr Leu Leu  
 660 665 670  
 Glu Phe Ala Gln Asp Ala Ala Pro Ile Pro Asn Gln Tyr Asp Lys His  
 675 680 685  
 Phe Met Glu Arg Asp Tyr Thr Gly Tyr Val Leu Ala Leu Asn Gly His  
 690 695 700  
 Lys Lys Tyr Phe Cys Leu Phe Lys Pro Gln Lys Thr Val Glu Glu Glu  
 705 710 715 720  
 Glu Ala Ile Gly Ser Cys Ser Asp Val Asp Ser Ser Leu Tyr Leu Gly  
 725 730 735  
 Glu

<210> 654  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 654  
 Met Asn Ser Ser Phe Phe Ile Ser Leu Pro Ala Leu Ile Trp Ser Val  
 1 5 10 15  
 Cys Leu Ile Leu Gly Trp Trp Gln Val Ser Ser Gly Lys Val Ala His  
 20 25 30  
 Cys Gly Phe Ile Phe Cys Phe Pro Asn Asn  
 35 40

<210> 655  
 <211> 111  
 <212> PRT  
 <213> Homo sapiens

<400> 655  
 Cys Gly Ser His Arg Met Ser Trp Lys Met Tyr Cys Pro Leu His Phe

1                      5                      10                      15  
 Ser Gly Arg Val Cys Glu Glu Leu Lys Phe Phe Phe Ser Phe Phe Phe  
                             20                      25                      30  
 Phe Leu Arg Arg Ser Leu Thr Pro Ala Gln Ala Thr Ala Gly Asp Ser  
                             35                      40                      45  
 Val Ser Lys Lys Gln Arg Glu Glu Arg Lys Lys Glu Lys Lys Glu Gly  
                             50                      55                      60  
 Arg Arg Lys Glu Gly Arg Asn Glu Gly Thr Lys Glu Gly Arg Lys Arg  
                             65                      70                      75                      80  
 Lys Glu Gly Arg Lys Lys Glu Arg Glu Arg Glu Arg Lys Lys Glu Arg  
                             85                      90                      95  
 Lys Lys Glu Arg Lys Lys Glu Lys Lys Lys Lys Thr Gly Thr  
                             100                      105                      110

<210> 656  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 656  
 Met Asn Ser Ser Phe Phe Ile Ser Leu Pro Ala Leu Ile Trp Ser Val  
                             1                      5                      10                      15  
 Cys Leu Ile Leu Gly Trp Trp Gln Val Ser Ser Gly Lys Val Ala His  
                             20                      25                      30  
 Cys Gly Phe Ile Phe Cys Phe Pro Asn Asn  
                             35                      40

<210> 657  
 <211> 128  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (67)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (68)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (70)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>

&lt;221&gt; SITE

&lt;222&gt; (96)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 657

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Met Pro Val Phe Val Cys Ser Ile Gly Leu Cys Phe Leu Phe Ser Ile
 1             5             10             15

Leu Leu Leu Phe Pro Pro Phe Gln Phe Ser Tyr Ile Cys Trp Leu Ser
      20             25             30

Gln Ala Ser Val Tyr Ser Pro Ser Pro Ser Leu Ser Asn Leu Glu Val
      35             40             45

Leu Leu Cys Leu Ser Ile Leu Leu Met Ile Ile Phe Pro Phe Leu Ile
 50             55             60

Ser Ile Xaa Xaa Ile Xaa Ser Ile Gly Arg Leu Ser Thr His Met Gly
 65             70             75             80

Ala His Thr His Thr His Thr His Thr His Thr His Thr His Thr Xaa
      85             90             95

Val Cys Tyr Trp Pro Leu Leu Leu Ile Ser Gln Glu Asn Glu Pro Phe
      100             105             110

Arg Met Phe Leu Pro Leu His Ser Ala Leu Thr Gln Asn Phe Cys Ser
      115             120             125

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&lt;210&gt; 658

&lt;211&gt; 128

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 658

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Met Pro Val Phe Val Cys Ser Ile Gly Leu Cys Phe Leu Phe Ser Ile
 1             5             10             15

Leu Leu Leu Phe Pro Pro Phe Gln Phe Ser Tyr Ile Cys Trp Leu Ser
      20             25             30

Gln Ala Ser Val Tyr Ser Pro Ser Pro Ser Leu Ser Asn Leu Glu Val
      35             40             45

Leu Leu Cys Leu Ser Ile Leu Leu Met Ile Ile Phe Pro Phe Leu Ile
 50             55             60

Ser Ile Ile His Ile Phe Ser Ile Gly Arg Leu Ser Thr His Met Gly
 65             70             75             80

Ala His Thr His Thr His Thr His Thr His Thr His Thr His Thr Gln
      85             90             95

Val Cys Tyr Trp Pro Leu Leu Leu Ile Ser Gln Glu Asn Glu Pro Phe
      100             105             110

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Arg Met Phe Leu Pro Leu His Ser Ala Leu Thr Gln Asn Phe Cys Ser  
 115 120 125

<210> 659  
 <211> 24  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (9)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (18)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 659  
 Met Ser Trp Arg Val Trp Ala Leu Xaa Phe Phe Pro Ala Val Cys Val  
 1 5 10 15

Cys Xaa Cys Val Cys Val Tyr Thr  
 20

<210> 660  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<400> 660  
 Val Leu Met Arg Ser Asp Gly Phe Ile Arg Gly Phe Ser Pro Phe Cys  
 1 5 10 15

Trp Ala Leu Leu Leu Leu Pro Pro Arg Glu Glu Gly Cys Val Cys Phe  
 20 25 30

Pro Phe Cys His Asp Cys Lys Phe Pro Val Ala Ser Pro Ser Leu Arg  
 35 40 45

Asn Cys Glu Ser Ile Lys Ala Leu Phe Phe Ile Lys Lys Lys Lys Lys  
 50 55 60

Asn  
 65

<210> 661  
 <211> 38  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 661

Met Ser Trp Arg Val Trp Ala Leu Leu Phe Phe Pro Ala Val Cys Val  
 1 5 10 15

Cys Val Cys Val Cys Val Cys Ala Cys Thr Arg Thr Arg Val Cys Asp  
 20 25 30

Glu Thr Ile Lys Leu Val  
 35

&lt;210&gt; 662

&lt;211&gt; 37

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 662

Met Val Glu Ser Pro Val Cys Gly Leu Leu Glu Gly Trp Phe Phe Leu  
 1 5 10 15

Leu Phe Ser Leu Ala Phe Leu Ser Thr His Leu Phe Ser Glu Ala Ser  
 20 25 30

Pro Leu Ser Ile Leu  
 35

&lt;210&gt; 663

&lt;211&gt; 37

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 663

Met Val Glu Ser Pro Val Cys Gly Leu Leu Glu Gly Trp Phe Phe Leu  
 1 5 10 15

Leu Phe Ser Leu Ala Phe Leu Ser Thr His Leu Phe Ser Glu Ala Ser  
 20 25 30

Pro Leu Ser Ile Leu  
 35

&lt;210&gt; 664

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 664

Met Thr Leu Ser Val Leu Gln His Phe Phe Ile Cys Val Leu Leu Ile  
 1 5 10 15

Leu Leu Leu Asp Thr Asn Leu Cys Arg Gln Ile Ser Ser His Ser Phe  
 20 25 30

Glu Phe Ser Gly Asn Gln Pro Leu Val Phe Cys Cys Ile Ser Ser Ile

35

40

45

Ser Ala Lys Leu Val Leu Asp Gln Ala Gly  
 50 55

<210> 665  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 665  
 Leu Glu  
 1

<210> 666  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 666  
 Met Thr Leu Ser Val Leu Gln His Phe Phe Ile Cys Val Leu Leu Ile  
 1 5 10 15

Leu Leu Leu Asp Thr Asn Leu Cys Arg Gln Ile Ser Ser His Ser Phe  
 20 25 30

Glu Phe Ser Gly Asn Gln Pro Leu Val Phe Cys Cys Ile Ser Ser Ile  
 35 40 45

Ser Ala Lys Leu Val Leu Asp Gln Ala Gly  
 50 55

<210> 667  
 <211> 124  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (89)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (103)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (104)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE

&lt;222&gt; (113)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (121)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 667

Val	Ala	Gln	Val	Gln	Val	Pro	Gly	Gly	His	Ile	Gly	Leu	Gly	Tyr	Leu
1			5						10					15	

Ala	Arg	Ile	Asp	Phe	His	Arg	Arg	Asp	Gly	Thr	Gly	Gly	Ile	Pro	Ala
		20						25					30		

Arg	Ile	Asp	Gly	Gly	Glu	Ile	Asp	Val	Ala	Leu	Leu	Pro	Gly	Gln	Ala
		35					40					45			

Val	Asp	His	Ile	Met	Ala	Arg	Ala	Cys	Gly	Gly	Glu	His	Leu	Ala	Glu
	50					55					60				

Val	Gly	Arg	Gly	Thr	Val	Gln	Gly	Leu	Leu	Gly	Arg	Ala	Val	Leu	Ala
65					70					75				80	

Ala	Gln	Ala	Arg	Arg	Ala	Pro	Pro	Xaa	Gln	Pro	Leu	Pro	Ala	Thr	Met
				85					90					95	

Gly	Phe	Trp	Gly	Trp	Lys	Xaa	Xaa	Pro	Asn	Arg	Gly	Leu	Trp	Phe	Lys
		100						105					110		

Xaa	Trp	Lys	Pro	Pro	Phe	Gly	Ala	Xaa	Gly	Val	Pro
		115					120				

&lt;210&gt; 668

&lt;211&gt; 283

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (174)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (189)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (205)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 668

Met	Lys	Ile	Val	Pro	Leu	Thr	Ala	Ala	Val	Leu	Ala	Leu	Val	Leu	Ala
1				5					10					15	

Pro	Ala	Ala	His	Ala	Gln	Pro	Ala	Asn	Lys	Ala	Thr	Thr	Val	Ser	Pro
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----



20					25					30					
Thr	Ala	Ala	Ala	Phe	Leu	Ala	Gln	Phe	Ala	Thr	Glu	Gly	Asn	Asp	Ser
	35						40					45			
Val	Ser	Trp	Ala	Gln	Phe	Glu	Ala	Phe	Arg	Lys	Gln	Arg	Tyr	Ala	Asp
	50					55					60				
Thr	Asp	Arg	Asn	Gln	Asp	Gly	His	Val	Asp	Glu	Gln	Glu	Tyr	Val	Asp
	65					70					75				80
Glu	Tyr	Leu	Gln	Arg	Phe	Asp	Val	Arg	Leu	Ala	Asp	Ala	Arg	Ala	Gly
				85					90					95	
His	Leu	Arg	Gln	Thr	Asp	Thr	Arg	Phe	Lys	Ala	Leu	Asp	Arg	Asp	Gly
			100					105					110		
Asn	Gly	Ala	Ile	Ser	Arg	Ala	Glu	Tyr	Asp	Ala	Ala	Gly	Glu	Arg	Thr
		115					120					125			
Trp	Ala	Gly	Tyr	Glu	Arg	Ser	Gln	Asn	Ala	Thr	Gln	Glu	Thr	Ala	Ala
	130					135					140				
Ala	Ser	Ser	Arg	Asp	Pro	Leu	Lys	Met	Pro	Thr	Ser	His	Thr	Ala	Asn
	145					150					155				160
Gly	Met	Leu	Asp	Leu	Tyr	Asp	Arg	Asn	Lys	Asp	Gly	Ala	Xaa	Asp	Arg
				165					170					175	
Glu	Glu	Phe	Asp	Ala	Val	Arg	Ala	Ala	Ser	Phe	Ala	Xaa	Thr	Asp	Thr
			180					185					190		
Asp	Gly	Asn	Gly	Thr	Leu	Ser	Leu	Ala	Glu	Tyr	Thr	Xaa	Glu	Phe	Glu
		195					200					205			
Gly	Arg	Leu	Asp	Gln	Gln	Arg	Gln	Arg	Val	Arg	Ala	Asp	Ala	Glu	Arg
	210					215					220				
Gln	Ala	Arg	Val	Arg	Phe	Ala	Ser	Leu	Asp	Lys	Asp	Thr	Asp	Gly	Arg
	225					230					235				240
Met	Thr	Phe	Ala	Glu	Tyr	Gln	Leu	Ser	Gly	Lys	Arg	Met	Phe	Asp	Arg
				245					250					255	
Ala	Asp	Ser	Asn	Gly	Asp	Gly	Val	Val	Asp	Ala	Arg	Asp	Pro	Glu	Pro
			260					265					270		
Val	Ala	Gly	Ala	His	Ser	Ala	Asn	Gly	Asn	Arg					
		275					280								

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<210> 669
<211> 283
<212> PRT
<213> Homo sapiens
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```
<400> 669
Met Lys Ile Val Pro Leu Thr Ala Ala Val Leu Ala Leu Val Leu Ala
   1               5             10            15
```

Pro Ala Ala His Ala Gln Pro Ala Asn Lys Ala Thr Thr Val Ser Pro  
                     20                    25                    30  
 Thr Ala Ala Ala Phe Leu Ala Gln Phe Ala Thr Glu Gly Asn Asp Ser  
                     35                    40                    45  
 Val Ser Trp Ala Gln Phe Glu Ala Phe Arg Lys Gln Arg Tyr Ala Asp  
                     50                    55                    60  
 Thr Asp Arg Asn Gln Asp Gly His Val Asp Glu Gln Glu Tyr Val Asp  
                     65                    70                    75                    80  
 Glu Tyr Leu Gln Arg Phe Asp Val Arg Leu Ala Asp Ala Arg Ala Gly  
                     85                    90                    95  
 His Leu Arg Gln Thr Asp Thr Arg Phe Lys Ala Leu Asp Arg Asp Gly  
                     100                    105                    110  
 Asn Gly Ala Ile Ser Arg Ala Glu Tyr Asp Ala Ala Gly Glu Arg Thr  
                     115                    120                    125  
 Trp Ala Gly Tyr Glu Arg Ser Gln Asn Ala Thr Gln Glu Thr Ala Ala  
                     130                    135                    140  
 Ala Ser Ser Arg Asp Pro Leu Lys Met Pro Thr Ser His Thr Ala Asn  
                     145                    150                    155                    160  
 Gly Met Leu Asp Leu Tyr Asp Arg Asn Lys Asp Gly Ala Val Asp Arg  
                     165                    170                    175  
 Glu Glu Phe Asp Ala Val Arg Ala Ala Ser Phe Ala Ala Thr Asp Thr  
                     180                    185                    190  
 Asp Gly Asn Gly Thr Leu Ser Leu Ala Glu Tyr Thr Ala Glu Phe Glu  
                     195                    200                    205  
 Gly Arg Leu Asp Gln Gln Arg Gln Arg Val Arg Ala Asp Ala Glu Arg  
                     210                    215                    220  
 Gln Ala Arg Val Arg Phe Ala Ser Leu Asp Lys Asp Thr Asp Gly Arg  
                     225                    230                    235                    240  
 Met Thr Phe Ala Glu Tyr Gln Leu Ser Gly Lys Arg Met Phe Asp Arg  
                     245                    250                    255  
 Ala Asp Ser Asn Gly Asp Gly Val Val Asp Ala Arg Asp Pro Glu Pro  
                     260                    265                    270  
 Val Ala Gly Ala His Ser Ala Asn Gly Asn Arg  
                     275                    280

&lt;210&gt; 670

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (4)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (11)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 670

Asn	Leu	Trp	Xaa	Ala	His	Phe	Phe	Leu	Asn	Xaa	Ser	Ser	Ile	Gln	Ile
1				5					10					15	

Glu	Tyr	Pro	Pro	Leu	Ser	Lys	Met	Leu	Glu	Thr	Pro	Lys	Gly	Lys	Gly
			20					25					30		

Trp	Phe	Phe	Gly	Glu	Phe	Phe	Phe	Trp	Val	Phe	Leu	Phe	Phe	Leu	Gly
			35				40					45			

Phe	Ala	Phe	Gly	Phe	Trp	Asn	Ser	Leu	Phe	Val	Leu	Tyr	Leu	Phe	Val
	50					55					60				

Gly	His	Pro	Lys	Ser	Glu	Ile	Cys	Ser	Lys	Ile	Gln	Asn	Val	Lys	Cys
65					70					75					80

Ser	Ser	Glu	His	Phe	Leu
					85

&lt;210&gt; 671

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 671

Met	Gly	Leu	Leu	Pro	Gly	Trp	Leu	Leu	Leu	Trp	Ala	Arg	Leu	Lys	Cys
1				5					10					15	

Phe	Cys	Ala	Val	Gly	Leu	Gly	Ser	Leu	Ala	Ala	Val	Tyr	Gly	Arg	Gly
			20					25					30		

Pro	Gly	Leu	Pro	Gln	Asp	Gln	Leu	Asp	Cys	Val	Leu	Trp	Asp	Cys	Gly
		35					40					45			

Thr	Leu	Gly	Leu	Tyr	Arg	Gly	Gln	Phe
	50					55		

&lt;210&gt; 672

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (8)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 672

Leu Phe Ser Gly Trp Leu Val Xaa Leu Cys Gly Val  
 1 5 10

&lt;210&gt; 673

&lt;211&gt; 48

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (31)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 673

Met Gly Glu Thr Leu Val Ser Val Phe Leu Lys Pro Pro Ala Leu Thr  
 1 5 10 15

Trp Leu Leu Arg Ala Ile Cys Leu Met Val Gln Thr Trp Ala Xaa Gly  
 20 25 30

Gln Arg Ser Trp Pro Gln Ser Leu Ala Leu Pro Cys Tyr Leu Asn Arg  
 35 40 45

&lt;210&gt; 674

&lt;211&gt; 29

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (3)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (13)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (17)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (19)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (23)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 674

Met Leu Xaa Ser Asn Ser Phe Ser Pro Ser Leu Ser Xaa Tyr Leu Cys  
 1 5 10 15

Xaa Leu Xaa Phe Ser Leu Xaa Ser Ser Lys Ser Ser Lys  
 20 25

&lt;210&gt; 675

&lt;211&gt; 29

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 675

Met Leu Cys Ser Asn Ser Phe Ser Pro Ser Leu Ser Val Tyr Leu Cys  
 1 5 10 15

Ser Leu Cys Phe Ser Leu Val Ser Ser Lys Ser Ser Lys  
 20 25

&lt;210&gt; 676

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 676

Met Pro Pro His Arg Gln Thr Asp Gly Gln Met Gly Leu Pro Ala Pro  
 1 5 10 15

Ala Leu Trp Val Trp Gly Leu Leu Leu Ser Ser Ser Phe Gln Thr Leu  
 20 25 30

Leu Pro Ala Phe Pro Lys Pro Pro Ala Leu Asn Leu Gly Cys Ser Thr  
 35 40 45

Arg Pro Ile Pro Ser Phe Leu Lys Ile  
 50 55

&lt;210&gt; 677

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (24)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (65)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 677

Gln Val Ser Leu Pro Thr Arg Leu Leu Gln Met Pro Gly Met Gly Leu  
 1 5 10 15  
 Asp Ser Arg Phe Gln Ala Trp Xaa Pro Ser Pro Tyr Leu Gly Pro Gln  
 20 25 30  
 Pro Arg Ala Pro Arg Pro Gly Leu Gln Pro Gly Pro Ser Leu Arg Gly  
 35 40 45  
 Ala Glu Phe Arg Glu Ser Cys Pro Arg Ser Gln Lys Arg Gly Arg Glu  
 50 55 60  
 Xaa Gly Arg Pro Cys Pro Gly Cys Arg Pro Gly Gly Trp Gly Leu Pro  
 65 70 75 80  
 Ala Arg Leu Gly Gln Pro Gln Leu Gln Thr Gly Pro Gly  
 85 90

<210> 678  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 678  
 Met Pro Pro His Arg Gln Thr Asp Gly Gln Met Gly Leu Pro Ala Pro  
 1 5 10 15  
 Ala Leu Trp Val Trp Gly Leu Leu Leu Ser Ser Ser Phe Gln Thr Leu  
 20 25 30  
 Leu Pro Ala Phe Pro Lys Pro Pro Ala Leu Asn Leu Gly Cys Ser Thr  
 35 40 45  
 Arg Pro Ile Pro Ser Phe Leu Lys Ile  
 50 55

<210> 679  
 <211> 25  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (13)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 679  
 Met Val Gly Arg Cys Ser Ile Leu Ser Ser Thr Pro Xaa Arg His Pro  
 1 5 10 15  
 Ser Leu Ser Trp Glu Gly Leu Gly Gly  
 20 25

<210> 680

<211> 25  
 <212> PRT  
 <213> Homo sapiens

<400> 680

Met Val Gly Arg Cys Ser Ile Leu Ser Ser Thr Pro Gln Arg His Pro  
 1 5 10 15

Ser Leu Ser Trp Glu Gly Leu Gly Gly  
 20 25

<210> 681  
 <211> 18  
 <212> PRT  
 <213> Homo sapiens

<220>

<221> SITE

<222> (13)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 681

Met Gly Thr Gln Gly Cys Pro His Pro Ser Trp Leu Xaa Leu Leu Gly  
 1 5 10 15

Leu Ser

<210> 682  
 <211> 30  
 <212> PRT  
 <213> Homo sapiens

<400> 682

Met Gly Thr Gln Gly Cys Pro His Pro Ser Trp Leu Leu Leu Leu Gly  
 1 5 10 15

Leu Ser Trp Trp Gly Glu Gly Asp Gly Ala Val Gly Pro Cys  
 20 25 30

<210> 683  
 <211> 10  
 <212> PRT  
 <213> Homo sapiens

<400> 683

Ser Leu Leu Glu Leu Gly Leu Gly Pro Leu  
 1 5 10

<210> 684  
 <211> 206  
 <212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (2)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (3)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (41)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 684

Asp Xaa Xaa Pro Gly Ala Tyr Ala Gly Phe Arg Pro Asn Ala Asn Arg  
1 5 10 15

Ile Ser Phe Pro Val Phe Arg Asn Asn Val Cys Pro Trp Pro Glu Ala  
20 25 30

Leu Arg Ser Ala Pro Lys Leu Leu Xaa Leu Asp Glu Pro Met Gly Ala  
35 40 45

Leu Asp Lys Lys Leu Arg Asp Arg Met Gln Leu Glu Val Val Asp Ile  
50 55 60

Leu Glu Arg Val Gly Val Thr Cys Val Met Val Thr His Asp Gln Glu  
65 70 75 80

Glu Ala Met Thr Met Ala Gly Arg Ile Ala Ile Met Asn Arg Gly Lys  
85 90 95

Phe Val Gln Ile Gly Glu Pro Glu Glu Ile Tyr Glu His Pro Thr Thr  
100 105 110

Arg Tyr Ser Ala Glu Phe Ile Gly Ser Val Asn Val Phe Glu Gly Val  
115 120 125

Leu Lys Glu Arg Gln Glu Asp Gly Leu Val Leu Asp Ser Pro Gly Leu  
130 135 140

Val His Pro Leu Lys Val Asp Ala Asp Ala Ser Val Val Asp Asn Val  
145 150 155 160

Pro Val His Val Ala Leu Arg Pro Glu Lys Ile Met Leu Cys Glu Glu  
165 170 175

Pro Pro Ala Asn Gly Cys Asn Phe Ala Val Gly Glu Val Ile His Ile  
180 185 190

Ala Tyr Leu Gly Asp Leu Ser Val Tyr His Val Arg Leu Lys  
195 200 205

<210> 685



<211> 440  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (168)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (169)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (173)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (180)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (191)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 685

Met	Ala	Ser	Leu	Val	Ser	Leu	Glu	Leu	Gly	Leu	Leu	Leu	Ala	Val	Leu	1	5	10	15
Val	Val	Thr	Ala	Thr	Ala	Ser	Pro	Pro	Ala	Gly	Leu	Leu	Ser	Leu	Leu	20	25	30	
Thr	Ser	Gly	Gln	Gly	Ala	Leu	Asp	Gln	Glu	Ala	Leu	Gly	Gly	Leu	Leu	35	40	45	
Asn	Thr	Leu	Ala	Asp	Arg	Val	His	Cys	Ala	Asn	Gly	Pro	Cys	Gly	Lys	50	55	60	
Cys	Leu	Ser	Val	Glu	Asp	Ala	Leu	Gly	Leu	Gly	Glu	Pro	Glu	Gly	Ser	65	70	75	80
Gly	Leu	Pro	Pro	Gly	Pro	Val	Leu	Glu	Ala	Arg	Tyr	Val	Ala	Arg	Leu	85	90	95	
Ser	Ala	Ala	Ala	Val	Leu	Tyr	Leu	Ser	Asn	Pro	Glu	Gly	Thr	Cys	Glu	100	105	110	
Asp	Ala	Arg	Ala	Gly	Leu	Trp	Ala	Ser	His	Ala	Asp	His	Leu	Leu	Ala	115	120	125	
Leu	Leu	Glu	Ser	Pro	Lys	Ala	Leu	Thr	Pro	Gly	Leu	Ser	Trp	Leu	Leu	130	135	140	
Gln	Arg	Met	Gln	Ala	Arg	Ala	Ala	Gly	Gln	Thr	Pro	Lys	Thr	Ala	Cys	145	150	155	160

Val Asp Ile Pro Gln Leu Leu Xaa Xaa Ala Val Gly Xaa Gly Ala Pro  
 165 170 175  
 Gly Ser Ala Xaa Gly Val Leu Ala Ala Leu Leu Asp His Val Xaa Ser  
 180 185 190  
 Gly Ser Cys Phe His Ala Leu Pro Ser Pro Gln Tyr Phe Val Asp Phe  
 195 200 205  
 Val Phe Gln Gln His Ser Ser Glu Val Pro Met Thr Leu Ala Glu Leu  
 210 215 220  
 Ser Ala Leu Met Gln Arg Leu Gly Val Gly Arg Glu Ala His Ser Asp  
 225 230 235 240  
 His Ser His Arg His Arg Gly Ala Ser Ser Arg Asp Pro Val Pro Leu  
 245 250 255  
 Ile Ser Ser Ser Asn Ser Ser Ser Val Trp Asp Thr Val Cys Leu Ser  
 260 265 270  
 Ala Arg Asp Val Met Ala Ala Tyr Gly Leu Ser Glu Gln Ala Gly Val  
 275 280 285  
 Thr Pro Glu Ala Trp Ala Gln Leu Ser Pro Ala Leu Leu Gln Gln Gln  
 290 295 300  
 Leu Ser Gly Ala Cys Thr Ser Gln Ser Arg Pro Pro Val Gln Asp Gln  
 305 310 315 320  
 Leu Ser Gln Ser Glu Arg Tyr Leu Tyr Gly Ser Leu Ala Thr Leu Leu  
 325 330 335  
 Ile Cys Leu Cys Ala Val Phe Gly Leu Leu Leu Leu Thr Cys Thr Gly  
 340 345 350  
 Cys Arg Gly Val Thr His Tyr Ile Leu Gln Thr Phe Leu Ser Leu Ala  
 355 360 365  
 Val Gly Ala Leu Thr Gly Asp Ala Val Leu His Leu Thr Pro Lys Val  
 370 375 380  
 Leu Gly Leu His Thr His Ser Glu Glu Gly Leu Ser Pro Gln Pro Thr  
 385 390 395 400  
 Trp Arg Leu Leu Ala Met Leu Ala Gly Leu Tyr Ala Phe Phe Leu Phe  
 405 410 415  
 Glu Asn Leu Phe Asn Leu Leu Leu Pro Arg Asp Pro Glu Asp Leu Glu  
 420 425 430  
 Asp Gly Pro Ala Ala Thr Ala Ala  
 435 440

&lt;210&gt; 686

&lt;211&gt; 647

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 686

Met Ala Ser Leu Val Ser Leu Glu Leu Gly Leu Leu Leu Ala Val Leu  
 1 5 10 15  
 Val Val Thr Ala Thr Ala Ser Pro Pro Ala Gly Leu Leu Ser Leu Leu  
 20 25 30  
 Thr Ser Gly Gln Gly Ala Leu Asp Gln Glu Ala Leu Gly Gly Leu Leu  
 35 40 45  
 Asn Thr Leu Ala Asp Arg Val His Cys Ala Asn Gly Pro Cys Gly Lys  
 50 55 60  
 Cys Leu Ser Val Glu Asp Ala Leu Gly Leu Gly Glu Pro Glu Gly Ser  
 65 70 75 80  
 Gly Leu Pro Pro Gly Pro Val Leu Glu Ala Arg Tyr Val Ala Arg Leu  
 85 90 95  
 Ser Ala Ala Ala Val Leu Tyr Leu Ser Asn Pro Glu Gly Thr Cys Glu  
 100 105 110  
 Asp Ala Arg Ala Gly Leu Trp Ala Ser His Ala Asp His Leu Leu Ala  
 115 120 125  
 Leu Leu Glu Ser Pro Lys Ala Leu Thr Pro Gly Leu Ser Trp Leu Leu  
 130 135 140  
 Gln Arg Met Gln Ala Arg Ala Ala Gly Gln Thr Pro Lys Thr Ala Cys  
 145 150 155 160  
 Val Asp Ile Pro Gln Leu Leu Glu Glu Ala Val Gly Ala Gly Ala Pro  
 165 170 175  
 Gly Ser Ala Gly Gly Val Leu Ala Ala Leu Leu Asp His Val Arg Ser  
 180 185 190  
 Gly Ser Cys Phe His Ala Leu Pro Ser Pro Gln Tyr Phe Val Asp Phe  
 195 200 205  
 Val Phe Gln Gln His Ser Ser Glu Val Pro Met Thr Leu Ala Glu Leu  
 210 215 220  
 Ser Ala Leu Met Gln Arg Leu Gly Val Gly Arg Glu Ala His Ser Asp  
 225 230 235 240  
 His Ser His Arg His Arg Gly Ala Ser Ser Arg Asp Pro Val Pro Leu  
 245 250 255  
 Ile Ser Ser Ser Asn Ser Ser Ser Val Trp Asp Thr Val Cys Leu Ser  
 260 265 270  
 Ala Arg Asp Val Met Ala Ala Tyr Gly Leu Ser Glu Gln Ala Gly Val  
 275 280 285  
 Thr Pro Glu Ala Trp Ala Gln Leu Ser Pro Ala Leu Leu Gln Gln Gln  
 290 295 300  
 Leu Ser Gly Ala Cys Thr Ser Gln Ser Arg Pro Pro Val Gln Asp Gln

305		310		315		320
Leu Ser Gln Ser Glu Arg Tyr Leu Tyr Gly Ser Leu Ala Thr Leu Leu						
		325		330		335
Ile Cys Leu Cys Ala Val Phe Gly Leu Leu Leu Leu Thr Cys Thr Gly						
		340		345		350
Cys Arg Gly Val Thr His Tyr Ile Leu Gln Thr Phe Leu Ser Leu Ala						
		355		360		365
Val Gly Ala Leu Thr Gly Asp Ala Val Leu His Leu Thr Pro Lys Val						
		370		375		380
Leu Gly Leu His Thr His Ser Glu Glu Gly Leu Ser Pro Gln Pro Thr						
		385		390		400
Trp Arg Leu Leu Ala Met Leu Ala Gly Leu Tyr Ala Phe Phe Leu Phe						
		405		410		415
Glu Asn Leu Phe Asn Leu Leu Leu Pro Arg Asp Pro Glu Asp Leu Glu						
		420		425		430
Asp Gly Pro Cys Gly His Ser Ser His Ser His Gly Gly His Ser His						
		435		440		445
Gly Val Ser Leu Gln Leu Ala Pro Ser Glu Leu Arg Gln Pro Lys Pro						
		450		455		460
Pro His Glu Gly Ser Arg Ala Asp Leu Val Ala Glu Glu Ser Pro Glu						
		465		470		475
Leu Leu Asn Pro Glu Pro Arg Arg Leu Ser Pro Glu Leu Arg Leu Leu						
		485		490		495
Pro Tyr Met Ile Thr Leu Gly Asp Ala Val His Asn Phe Ala Asp Gly						
		500		505		510
Leu Ala Val Gly Ala Ala Phe Ala Ser Ser Trp Lys Thr Gly Leu Ala						
		515		520		525
Thr Ser Leu Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp						
		530		535		540
Phe Ala Ala Leu Leu His Ala Gly Leu Ser Val Arg Gln Ala Leu Leu						
		545		550		555
Leu Asn Leu Ala Ser Ala Leu Thr Ala Phe Ala Gly Leu Tyr Val Ala						
		565		570		575
Leu Ala Val Gly Val Ser Glu Glu Ser Glu Ala Trp Ile Leu Ala Val						
		580		585		590
Ala Thr Gly Leu Phe Leu Tyr Val Ala Leu Cys Asp Met Leu Pro Ala						
		595		600		605
Met Leu Lys Val Arg Asp Pro Arg Pro Trp Leu Leu Phe Leu Leu His						
		610		615		620
Asn Val Gly Leu Leu Gly Gly Trp Thr Val Leu Leu Leu Leu Ser Leu						

625

630

635

640

Tyr Glu Asp Asp Ile Thr Phe  
645

&lt;210&gt; 687

&lt;211&gt; 49

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (48)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 687

Ile Ser Val Ile Phe Asn Asp Thr Val Lys Lys Thr Met Gln Glu Cys  
1 5 10 15

Ser Ala Met Lys Gln Ile Phe Lys Asp Leu Phe Thr Gly Phe Leu Ser  
20 25 30

Trp Asn Ile His Leu Phe Pro Arg Cys Leu Cys Asp Ser Glu Ile Xaa  
35 40 45

Pro

&lt;210&gt; 688

&lt;211&gt; 307

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (249)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (261)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 688

Met Leu Arg Val Val Glu Gly Ile Phe Ile Phe Val Val Val Ser Glu  
1 5 10 15

Ser Val Phe Gly Val Leu Gly Asn Gly Phe Ile Gly Leu Val Asn Cys  
20 25 30

Ile Asp Cys Ala Lys Asn Lys Leu Ser Thr Ile Gly Phe Ile Leu Thr  
35 40 45

Gly Leu Ala Ile Ser Arg Ile Phe Leu Ile Trp Ile Ile Ile Thr Asp  
50 55 60

Gly Phe Ile Gln Ile Phe Ser Pro Asn Ile Tyr Ala Ser Gly Asn Leu  
 65 70 75 80  
 Ile Glu Tyr Ile Ser Tyr Phe Trp Val Ile Gly Asn Gln Ser Ser Met  
 85 90 95  
 Trp Phe Ala Thr Ser Leu Ser Ile Phe Tyr Phe Leu Lys Ile Ala Asn  
 100 105 110  
 Phe Ser Asn Tyr Ile Phe Leu Trp Leu Lys Ser Arg Thr Asn Met Val  
 115 120 125  
 Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu Asn Phe  
 130 135 140  
 Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Met Lys Asn Asp Thr  
 145 150 155 160  
 Val Trp Asp Leu Asn Met Tyr Lys Ser Glu Tyr Phe Ile Lys Gln Ile  
 165 170 175  
 Leu Leu Asn Leu Gly Val Ile Phe Phe Phe Thr Leu Ser Leu Ile Thr  
 180 185 190  
 Cys Ile Phe Leu Ile Ile Ser Leu Trp Arg His Asn Arg Gln Met Gln  
 195 200 205  
 Ser Asn Val Thr Gly Leu Arg Asp Ser Asn Thr Glu Ala His Val Lys  
 210 215 220  
 Ala Met Lys Val Leu Ile Ser Phe Ile Ile Leu Phe Ile Leu Tyr Phe  
 225 230 235 240  
 Ile Gly Met Ala Ile Glu Ile Ser Xaa Phe Thr Val Arg Glu Asn Lys  
 245 250 255  
 Leu Leu Leu Met Xaa Gly Met Thr Thr Thr Ala Ile Tyr Pro Trp Gly  
 260 265 270  
 His Ser Phe Ile Leu Ile Leu Gly Asn Ser Lys Leu Lys Gln Ala Ser  
 275 280 285  
 Leu Arg Val Leu Gln Gln Leu Lys Cys Cys Glu Lys Arg Lys Asn Leu  
 290 295 300  
 Arg Val Thr  
 305

<210> 689  
 <211> 181  
 <212> PRT  
 <213> Homo sapiens

<400> 689  
 Met Val Leu Pro Phe Met Ile Val Phe Leu Leu Ile Ser Ser Leu Leu  
 1 5 10 15

Asn Phe Ala Tyr Ile Ala Lys Ile Leu Asn Asp Tyr Lys Met Lys Asn

				20					25					30	
Asp	Thr	Val	Trp	Asp	Leu	Asn	Met	Tyr	Lys	Ser	Glu	Tyr	Phe	Ile	Lys
				35					40					45	
Gln	Ile	Leu	Leu	Asn	Leu	Gly	Val	Ile	Phe	Phe	Phe	Thr	Leu	Ser	Leu
				50					55					60	
Ile	Thr	Cys	Ile	Phe	Leu	Ile	Ile	Ser	Leu	Trp	Arg	His	Asn	Arg	Gln
					70					75					80
Met	Gln	Ser	Asn	Val	Thr	Gly	Leu	Arg	Asp	Ser	Asn	Thr	Glu	Ala	His
				85					90					95	
Val	Lys	Ala	Met	Lys	Val	Leu	Ile	Ser	Phe	Ile	Ile	Leu	Phe	Ile	Leu
				100					105					110	
Tyr	Phe	Ile	Gly	Met	Ala	Ile	Glu	Ile	Ser	Cys	Phe	Thr	Val	Arg	Glu
				115					120					125	
Asn	Lys	Leu	Leu	Leu	Met	Phe	Gly	Met	Thr	Thr	Thr	Ala	Ile	Tyr	Pro
				130					135					140	
Trp	Gly	His	Ser	Phe	Ile	Leu	Ile	Leu	Gly	Asn	Ser	Lys	Leu	Lys	Gln
					150					155					160
Ala	Ser	Leu	Arg	Val	Leu	Gln	Gln	Leu	Lys	Cys	Cys	Glu	Lys	Arg	Lys
				165					170					175	
Asn	Leu	Arg	Val	Thr											
				180											

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<210> 690
<211> 70
<212> PRT
<213> Homo sapiens
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<400> 690
Ala Ala Met Arg Arg Trp Ala Ser Ser Ser Leu Glu Gly Glu Glu Leu
  1                      5                      10                      15
Ser Thr Gln Arg Asp Leu Thr Arg Lys Val His Pro Pro Ser Thr Gln
          20                      25                      30
Glu Ala Pro Ala Asp Ser Met Cys Phe Arg Leu Cys Trp Pro Asn Gly
          35                      40                      45
Leu Cys Arg Asp Tyr Ser Ala Leu Pro Leu Trp Leu Gln Ser Asp His
  50                      55                      60
Arg Pro Ser Glu Ser Glu
  65                      70

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<210> 691
<211> 88
<212> PRT
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<213> Homo sapiens

<220>

<221> SITE

<222> (63)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (73)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 691

Met Pro Val Gly Ser Leu Pro His Pro Gly Cys Leu Trp Ala Ala Phe  
1 5 10 15

Leu Thr Leu Asp Ala Cys Gly Leu Pro Ser Ser Pro Trp Met Pro Val  
20 25 30

Gly Ser Leu Pro His Pro Gly Cys Leu Trp Ala Ala Phe Leu Thr Leu  
35 40 45

Asp Ala Cys Gly Gln Pro Ser Ser Pro Trp Met Pro Val Gly Xaa Leu  
50 55 60

Leu Thr Leu Asp Ala Cys Gly Gln Xaa Ser Ser Pro Gly Cys Leu Trp  
65 70 75 80

Ala Ala Phe Leu Thr Trp Ser Leu  
85

<210> 692

<211> 190

<212> PRT

<213> Homo sapiens

<400> 692

Met Pro Val Gly Ser Leu Pro His Pro Gly Cys Leu Trp Ala Ala Phe  
1 5 10 15

Leu Thr Leu Asp Ala Cys Gly Leu Pro Ser Ser Pro Trp Met Pro Val  
20 25 30

Gly Ser Leu Pro His Pro Gly Cys Leu Trp Ala Ala Phe Leu Thr Leu  
35 40 45

Asp Ala Cys Gly Gln Pro Ser Ser Pro Trp Met Pro Val Gly Cys Leu  
50 55 60

Pro His Pro Gly Cys Leu Trp Ala Ala Phe Leu Thr Leu Asp Ala Cys  
65 70 75 80

Gly Gln Pro Ser Ser Pro Trp Met Pro Val Thr Trp Phe Pro Trp Gly  
85 90 95

Leu Pro Lys Leu Arg Asp Pro Lys Pro Pro Ser Asn Leu Met Thr Arg  
100 105 110



Pro Val Ser Glu His Thr Cys Val Val Pro Glu Pro Leu Thr Asn Pro  
 115 120 125

Leu Cys Asn Pro Ala His Ala Phe Pro Ile Leu Lys Gly Pro Ala His  
 130 135 140

Arg Pro Ala His Val Phe Pro Leu Pro Leu Leu Cys Pro Tyr Leu Val  
 145 150 155 160

Gly Ser Cys Pro Phe Trp Ala Leu Val Trp His Phe Thr His Lys Cys  
 165 170 175

Val Leu Trp Val Val Ser Gly Pro Pro Pro Ala Val Arg Gly  
 180 185 190

<210> 693

<211> 38

<212> PRT

<213> Homo sapiens

<400> 693

Met Trp Leu Ser Pro Val Pro Gly Val Cys Ala Ala Val Leu Ala Leu  
 1 5 10 15

Ser Phe Trp Ile Ala Lys Phe Pro Gly Glu Gly Thr Ala Ile Ala Lys  
 20 25 30

Ala Leu Gly Arg Leu Lys  
 35

<210> 694

<211> 38

<212> PRT

<213> Homo sapiens

<400> 694

Met Trp Leu Ser Pro Val Pro Gly Val Cys Ala Ala Val Leu Ala Leu  
 1 5 10 15

Ser Phe Trp Ile Ala Lys Phe Pro Gly Glu Gly Thr Ala Ile Ala Lys  
 20 25 30

Ala Leu Gly Arg Leu Lys  
 35

<210> 695

<211> 26

<212> PRT

<213> Homo sapiens

<400> 695

Gly Leu Phe Leu Gly Gln Met Asn Trp Ile Phe Ser Cys Cys Phe Ser  
 1 5 10 15

Asn Asn Val Thr Thr Thr Val Lys Lys Arg  
                   20                  25

<210> 696  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 696  
 Met Ser Phe Thr Val Ser Met Ala Ile Gly Leu Val Leu Gly Gly Phe  
   1                  5                  10                  15  
 Ile Trp Ala Val Phe Ile Cys Leu Ser Arg Arg Arg Arg Ala Ser Ala  
                   20                  25                  30  
 Pro Ile Ser Gln Trp Ser Ser Ser Arg Arg Ser Arg Ser Ser Tyr Thr  
                   35                  40                  45  
 His Gly Leu Asn Arg Thr Gly Phe Tyr Arg His Ser Gly Cys Glu Arg  
   50                  55                  60  
 Arg Ser Asn Leu Ser Leu Ala Ser Leu Thr Phe Gln Arg Gln Ala Ser  
   65                  70                  75                  80  
 Leu Glu Gln Ala Asn Ser Phe Pro Arg Lys Ser Ser Phe Arg Ala Ser  
                   85                  90                  95  
 Thr Phe His Pro Phe Leu Gln Cys Pro Pro Leu Pro Val Glu Thr Glu  
                   100                  105                  110  
 Ser Gln Leu Val Thr Leu Pro Ser Ser Asn Ile Ser Pro Thr Ile Ser  
                   115                  120                  125  
 Thr Ser His Ser Leu Ser Arg Pro Asp Tyr Trp Ser Ser Asn Ser Leu  
   130                  135                  140  
 Arg Val Gly Leu Ser Thr Pro Pro Pro Pro Ala Tyr Glu Ser Ile Ile  
   145                  150                  155                  160  
 Lys Ala Phe Pro Asp Ser  
                   165

<210> 697  
 <211> 166  
 <212> PRT  
 <213> Homo sapiens

<400> 697  
 Met Ser Phe Thr Val Ser Met Ala Ile Gly Leu Val Leu Gly Gly Phe  
   1                  5                  10                  15  
 Ile Trp Ala Val Phe Ile Cys Leu Ser Arg Arg Arg Arg Ala Ser Ala  
                   20                  25                  30  
 Pro Ile Ser Gln Trp Ser Ser Ser Arg Arg Ser Arg Ser Ser Tyr Thr  
                   35                  40                  45

His Gly Leu Asn Arg Thr Gly Phe Tyr Arg His Ser Gly Cys Glu Arg  
 50 55 60  
 Arg Ser Asn Leu Ser Leu Ala Ser Leu Thr Phe Gln Arg Gln Ala Ser  
 65 70 75 80  
 Leu Glu Gln Ala Asn Ser Phe Pro Arg Lys Ser Ser Phe Arg Ala Ser  
 85 90 95  
 Thr Phe His Pro Phe Leu Gln Cys Pro Pro Leu Pro Val Glu Thr Glu  
 100 105 110  
 Ser Gln Leu Val Thr Leu Pro Ser Ser Asn Ile Ser Pro Thr Ile Ser  
 115 120 125  
 Thr Ser His Ser Leu Ser Arg Pro Asp Tyr Trp Ser Ser Asn Ser Leu  
 130 135 140  
 Arg Val Gly Leu Ser Thr Pro Pro Pro Pro Ala Tyr Glu Ser Ile Ile  
 145 150 155 160  
 Lys Ala Phe Pro Asp Ser  
 165

<210> 698  
 <211> 61  
 <212> PRT  
 <213> Homo sapiens

<400> 698  
 Met Val Leu Ile Asn Ser Gly Lys Pro Gly Ser Lys Cys Cys Trp Val  
 1 5 10 15  
 Phe Arg Pro Gly Leu Ser Ala Pro Cys Ser Ala Leu Trp Trp Gly Cys  
 20 25 30  
 Pro Gly Leu Ala Leu Ser Leu Ser Gly Pro Gln Val Arg Leu Phe Thr  
 35 40 45  
 Arg Arg Tyr Glu Thr Thr Leu Pro Asn Thr Gly Pro Trp  
 50 55 60

<210> 699  
 <211> 54  
 <212> PRT  
 <213> Homo sapiens

<400> 699  
 Met Leu Leu Gly Leu Gln Ala Arg Leu Val Ser Ser Leu Leu Cys Ser  
 1 5 10 15  
 Val Val Gly Cys Leu Gly Cys Ser Phe Phe Cys Pro Arg Arg Tyr Tyr  
 20 25 30  
 Lys Lys Leu Asn Leu His Lys Ala Cys Met Glu Asn Ser Val Ser Ala

35 40 45  
 Glu Ile Arg Ser Asp Arg  
 50  
 <210> 700  
 <211> 240  
 <212> PRT  
 <213> Homo sapiens.  
 <400> 700  
 Met Ser Arg Tyr Leu Leu Pro Leu Ser Ala Leu Gly Thr Val Ala Gly  
 1 5 10 15  
 Ala Ala Val Leu Leu Lys Asp Tyr Val Thr Gly Gly Ala Cys Pro Ser  
 20 25 30  
 Lys Ala Thr Ile Pro Gly Lys Thr Val Ile Val Thr Gly Ala Asn Thr  
 35 40 45  
 Gly Ile Gly Lys Gln Thr Ala Leu Glu Leu Ala Arg Arg Gly Gly Asn  
 50 55 60  
 Ile Ile Leu Ala Cys Arg Asp Met Glu Lys Cys Glu Ala Ala Ala Lys  
 65 70 75 80  
 Asp Ile Arg Gly Glu Thr Leu Asn His His Val Asn Ala Arg His Leu  
 85 90 95  
 Asp Leu Ala Ser Leu Lys Ser Ile Arg Glu Phe Ala Ala Lys Ile Ile  
 100 105 110  
 Glu Glu Glu Glu Arg Val Asp Ile Leu Ile Asn Asn Ala Gly Val Met  
 115 120 125  
 Arg Cys Pro His Trp Thr Thr Glu Asp Gly Phe Glu Met Gln Phe Gly  
 130 135 140  
 Val Asn His Leu Gly His Phe Leu Leu Thr Asn Leu Leu Leu Asp Lys  
 145 150 155 160  
 Leu Lys Ala Ser Ala Pro Ser Arg Ile Ile Asn Leu Ser Ser Leu Ala  
 165 170 175  
 His Val Ala Gly His Ile Asp Phe Asp Asp Leu Asn Trp Gln Thr Arg  
 180 185 190  
 Lys Tyr Asn Thr Lys Ala Ala Tyr Cys Gln Ser Lys Leu Ala Ile Val  
 195 200 205  
 Leu Phe Thr Lys Glu Leu Ser Arg Arg Leu Gln Gly Thr Gly Ala Leu  
 210 215 220  
 Gly Ser Ala Ser Leu Leu Leu Tyr Ser Glu Pro Arg Ala Ala Phe Pro  
 225 230 235 240

<210> 701  
 <211> 246  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (222)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (223)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (236)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (242)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (244)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 701  
 Met Gly Ala Ala Val Phe Phe Gly Cys Thr Phe Val Ala Phe Gly Pro  
     1                    5                    10                    15  
 Ala Phe Ala Leu Phe Leu Ile Thr Val Ala Gly Asp Pro Leu Arg Val  
                     20                    25                    30  
 Ile Ile Leu Val Ala Gly Ala Phe Phe Trp Leu Val Ser Leu Leu Leu  
             35                    40                    45  
 Ala Ser Val Val Trp Phe Ile Leu Val His Val Thr Asp Arg Ser Asp  
     50                    55                    60  
 Ala Arg Leu Gln Tyr Gly Leu Leu Ile Phe Gly Ala Ala Val Ser Val  
     65                    70                    75                    80  
 Leu Leu Gln Glu Val Phe Arg Phe Ala Tyr Tyr Lys Leu Leu Lys Lys  
                     85                    90                    95  
 Ala Asp Glu Gly Leu Ala Ser Leu Ser Glu Asp Gly Arg Ser Pro Ile  
             100                    105                    110  
 Ser Ile Arg Gln Met Ala Tyr Val Ser Gly Leu Ser Phe Gly Ile Ile  
     115                    120                    125  
 Ser Gly Val Phe Ser Val Ile Asn Ile Leu Ala Asp Ala Leu Gly Pro  
     130                    135                    140

Gly Val Val Gly Ile His Gly Asp Ser Pro Tyr Tyr Phe Leu Thr Ser  
 145 150 155 160  
 Ala Phe Leu Thr Ala Ala Ile Ile Leu Leu His Thr Phe Trp Gly Val  
 165 170 175  
 Val Phe Phe Asp Ala Cys Glu Arg Arg Arg Tyr Trp Ala Leu Gly Leu  
 180 185 190  
 Val Val Gly Ser His Leu Leu Thr Ser Gly Leu Thr Phe Leu Asn Pro  
 195 200 205  
 Trp Tyr Glu Ala Ser Leu Leu Pro Ser Met Gln Ser Leu Xaa Xaa Trp  
 210 215 220  
 Gly Ser Gly Pro Ser Ser Gln Leu Glu Gly Pro Xaa Lys Tyr Ser Ala  
 225 230 235 240  
 Gln Xaa Leu Xaa Lys Asp  
 245

<210> 702  
 <211> 5  
 <212> PRT  
 <213> Homo sapiens

<400> 702  
 Gly Glu Ile Phe Leu  
 1 5

<210> 703  
 <211> 84  
 <212> PRT  
 <213> Homo sapiens

<400> 703  
 Lys Met His Phe Asn Lys Asn Lys Ser Ile Leu Lys Ser Phe Ser Phe  
 1 5 10 15  
 Val Arg Gly Asn Met Asn Glu Ile His Ser Tyr Leu Lys Thr Glu Tyr  
 20 25 30  
 Phe Thr Ala Lys Thr Leu Asn Ile Ser Arg Ala Tyr His Ile Leu Asn  
 35 40 45  
 Thr Leu Trp Ser Cys Ser Tyr Phe Asn Ile Pro Gly Ser Gly Gly Gln  
 50 55 60  
 Leu Ala Cys Leu Trp Leu Arg Ile Cys Phe His Ala Cys Phe Leu Ser  
 65 70 75 80  
 Phe Phe Tyr Leu

<210> 704  
<211> 5  
<212> PRT  
<213> Homo sapiens

<400> 704  
Val Leu Leu Ile Leu  
1 5

<210> 705  
<211> 266  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (45)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (47)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (51)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (134)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (183)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (222)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (224)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (255)  
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 705  
Met Pro Arg His Leu Ser Gly Leu Leu Leu Leu Trp Pro Leu Leu  
1 5 10 15

Leu Leu Leu Pro Pro Thr Pro Ala Ala Pro Gly Pro Leu Ala Arg Pro  
                   20                                  25                                  30  
 Gly Leu Arg Arg Leu Gly Thr Arg Gly Pro Gly Gly Xaa Pro Xaa Arg  
                   35                                  40                                  45  
 Arg Pro Xaa Ser Ala Val Pro Thr Arg Ala Pro Tyr Ser Gly Ala Gly  
                   50                                  55                                  60  
 Gln Pro Gly Gly Ala Arg Gly Ala Gly Val Cys Arg Ser Arg Pro Leu  
                   65                                  70                                  75                                  80  
 Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser Val Arg Pro Leu Glu  
                                   85                                  90                                  95  
 Phe Thr Lys Val Lys Thr Phe Val Ser Gln Ile Ile Asp Thr Leu Asp  
                                   100                                  105                                  110  
 Ile Gly Ala Ala Asp Thr Arg Val Ala Val Val Asn Tyr Ala Ser Thr  
                                   115                                  120                                  125  
 Val Lys Ile Glu Phe Xaa Leu Gln Thr His Ser Asp Lys Gln Ser Leu  
                                   130                                  135                                  140  
 Lys Gln Ala Val Ala Arg Ile Thr Pro Leu Ser Thr Gly Thr Met Ser  
                                   145                                  150                                  155                                  160  
 Gly Leu Ala Ile Gln Thr Ala Met Asp Glu Ala Phe Thr Val Glu Ala  
                                   165                                  170                                  175  
 Gly Ala Arg Gly Pro Thr Xaa Asn Ile Pro Lys Val Ala Ile Ile Val  
                                   180                                  185                                  190  
 Thr Asp Gly Arg Pro Gln Asp Gln Val Asn Glu Val Ala Ala Arg Ala  
                                   195                                  200                                  205  
 Arg Ala Ser Gly Ile Glu Leu Tyr Ala Val Gly Val Asp Xaa Ala Xaa  
                                   210                                  215                                  220  
 Met Glu Ser Leu Gln Asp Glu Trp Pro Ala Lys Pro Leu Asp Glu His  
                                   225                                  230                                  235                                  240  
 Val Phe Tyr Val Glu Thr Tyr Gly Val Ile Glu Lys Pro Ser Xaa Arg  
                                   245                                  250                                  255  
 Phe Gln Glu Thr Leu Leu Arg Ser Trp Asn  
                                   260                                  265

&lt;210&gt; 706

&lt;211&gt; 484

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 706

Met Pro Arg His Leu Ser Gly Leu Leu Leu Leu Leu Trp Pro Leu Leu  
   1                                  5                                  10                                  15



Leu Leu Leu Pro Pro Thr Pro Ala Ala Pro Gly Pro Leu Ala Arg Pro  
 20 25 30  
 Gly Leu Arg Arg Leu Gly Thr Arg Gly Pro Gly Gly Ser Pro Gly Arg  
 35 40 45  
 Arg Pro Gly Ser Ala Val Pro Thr Arg Ala Pro Tyr Ser Gly Ala Gly  
 50 55 60  
 Gln Pro Gly Gly Ala Arg Gly Ala Gly Val Cys Arg Ser Arg Pro Leu  
 65 70 75 80  
 Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser Val Arg Pro Leu Glu  
 85 90 95  
 Phe Thr Lys Val Lys Thr Phe Val Ser Gln Ile Ile Asp Thr Leu Asp  
 100 105 110  
 Ile Gly Ala Ala Asp Thr Arg Val Ala Val Val Asn Tyr Ala Ser Thr  
 115 120 125  
 Val Lys Ile Glu Phe His Leu Gln Thr His Ser Asp Lys Gln Ser Leu  
 130 135 140  
 Lys Gln Ala Val Ala Arg Ile Thr Pro Leu Ser Thr Gly Thr Met Ser  
 145 150 155 160  
 Gly Leu Ala Ile Gln Thr Ala Met Asp Glu Ala Phe Thr Val Glu Ala  
 165 170 175  
 Gly Ala Arg Gly Pro Thr Ser Asn Ile Pro Lys Val Ala Ile Ile Val  
 180 185 190  
 Thr Asp Gly Arg Pro Gln Asp Gln Val Asn Glu Val Ala Ala Arg Ala  
 195 200 205  
 Arg Ala Ser Gly Ile Glu Leu Tyr Ala Val Gly Val Asp Arg Ala Asp  
 210 215 220  
 Met Glu Ser Leu Lys Met Met Ala Ser Glu Pro Leu Asp Glu His Val  
 225 230 235 240  
 Phe Tyr Val Glu Thr Tyr Gly Val Ile Glu Lys Leu Ser Ser Arg Phe  
 245 250 255  
 Gln Glu Thr Phe Cys Ala Leu Asp Pro Cys Val Leu Gly Thr His Arg  
 260 265 270  
 Cys Gln His Val Cys Val Ser Asp Gly Glu Gly Lys His His Cys Glu  
 275 280 285  
 Cys Ser Gln Gly Tyr Ser Leu Asn Ala Asp Gln Lys Thr Cys Ser Ala  
 290 295 300  
 Ile Asp Lys Cys Ala Leu Asn Thr His Gly Cys Glu His Ile Cys Val  
 305 310 315 320  
 Asn Asp Arg Thr Gly Ser Tyr His Cys Glu Cys Tyr Glu Gly Tyr Thr  
 325 330 335

Leu Asn Gln Asp Arg Lys Thr Cys Ser Ala Gln Asp Gln Cys Ala Phe  
                   340                  345                  350  
 Gly Thr His Gly Cys Gln His Ile Cys Val Asn Asp Arg Asp Gly Ser  
                   355                  360                  365  
 His His Cys Glu Cys Tyr Glu Gly Tyr Thr Leu Asn Ala Asp Asn Lys  
                   370                  375                  380  
 Thr Cys Ser Val Arg Ser Glu Cys Ala Gly Gly Ser His Gly Cys Gln  
 385                  390                  395                  400  
 His Leu Cys Val Asp Asp Gly Pro Ala Ala Tyr His Cys Asp Cys Phe  
                   405                  410                  415  
 Pro Gly Tyr Thr Leu Thr Glu Asp Arg Arg Thr Cys Ala Ala Ile Glu  
                   420                  425                  430  
 Glu Ala Arg Arg Leu Val Ser Thr Glu Asp Ala Cys Gly Cys Glu Ala  
                   435                  440                  445  
 Thr Leu Ala Phe Gln Glu Arg Ala Ser Ser Tyr Leu Gln Arg Leu Asn  
                   450                  455                  460  
 Ala Lys Leu Asp Asp Ile Leu Gly Lys Leu Gln Ala Asp Ala Tyr Gly  
 465                  470                  475                  480  
 Gln Ile His Arg

&lt;210&gt; 707

&lt;211&gt; 368

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (310)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (365)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 707

Met Gln Pro Ser Ser Leu Leu Pro Leu Ala Leu Cys Leu Leu Ala Ala  
   1                  5                  10                  15

Pro Ala Ser Ala Leu Val Arg Ile Pro Leu His Lys Phe Thr Ser Ile  
                   20                  25                  30

Arg Arg Thr Met Ser Glu Val Gly Gly Ser Val Glu Asp Leu Ile Ala  
                   35                  40                  45

Lys Gly Pro Val Ser Lys Tyr Ser Gln Ala Val Pro Ala Val Thr Glu  
                   50                  55                  60

Gly	Pro	Ile	Pro	Glu	Val	Leu	Lys	Asn	Tyr	Met	Asp	Ala	Gln	Tyr	Tyr	65	70	75	80
Gly	Glu	Ile	Gly	Ile	Gly	Thr	Pro	Pro	Gln	Cys	Phe	Thr	Val	Val	Phe	85	90	95	
Asp	Thr	Gly	Ser	Ser	Asn	Leu	Trp	Val	Pro	Ser	Ile	His	Cys	Lys	Leu	100	105	110	
Leu	Asp	Ile	Ala	Cys	Trp	Ile	His	His	Lys	Tyr	Asn	Ser	Asp	Lys	Ser	115	120	125	
Ser	Thr	Tyr	Val	Lys	Asn	Gly	Thr	Ser	Phe	Asp	Ile	His	Tyr	Gly	Ser	130	135	140	
Gly	Ser	Leu	Ser	Gly	Tyr	Leu	Ser	Gln	Asp	Thr	Val	Ser	Val	Pro	Cys	145	150	155	160
Gln	Ser	Ala	Ser	Ser	Ala	Ser	Ala	Leu	Gly	Gly	Val	Lys	Val	Glu	Arg	165	170	175	
Gln	Val	Phe	Gly	Glu	Ala	Thr	Lys	Gln	Pro	Gly	Ile	Thr	Phe	Ile	Ala	180	185	190	
Ala	Lys	Phe	Asp	Gly	Ile	Leu	Gly	Met	Ala	Tyr	Pro	Arg	Ile	Ser	Val	195	200	205	
Asn	Asn	Val	Leu	Pro	Val	Phe	Asp	Asn	Leu	Met	Gln	Gln	Lys	Leu	Val	210	215	220	
Asp	Gln	Asn	Ile	Phe	Ser	Phe	Tyr	Leu	Ser	Arg	Asp	Pro	Asp	Ala	Gln	225	230	235	240
Pro	Gly	Gly	Glu	Leu	Met	Leu	Gly	Gly	Thr	Asp	Ser	Lys	Tyr	Tyr	Lys	245	250	255	
Gly	Ser	Leu	Ser	Tyr	Leu	Asn	Val	Thr	Arg	Lys	Ala	Tyr	Trp	Gln	Val	260	265	270	
His	Leu	Asp	Gln	Val	Glu	Val	Ala	Ser	Gly	Leu	Thr	Leu	Cys	Lys	Glu	275	280	285	
Gly	Cys	Glu	Ala	Ile	Val	Asp	Thr	Gly	Thr	Ser	Leu	Met	Val	Gly	Pro	290	295	300	
Val	Asp	Glu	Val	Arg	Xaa	Leu	Gln	Lys	Ala	Ile	Gly	Ala	Val	Pro	Leu	305	310	315	320
Ile	Gln	Gly	Glu	Tyr	Met	Ile	Pro	Cys	Glu	Lys	Val	Ser	Thr	Leu	Pro	325	330	335	
Ala	Ile	Thr	Leu	Lys	Leu	Gly	Gly	Lys	Gly	Tyr	Lys	Leu	Ser	Pro	Glu	340	345	350	
Asp	Tyr	Thr	Leu	Lys	Val	Ser	Gln	Ala	Gly	Lys	Thr	Xaa	Cys	Leu	Ser	355	360	365	

<210> 708  
 <211> 92  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (43)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (69)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (70)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 708  
 Leu Val Val Leu Gly Val Cys Ala Ala Gln His Glu Leu Thr Pro Arg  
     1                    5                    10                    15  
 Leu Arg Ala Gly Val Pro Val Gln Val Glu Arg Glu Asp Val Leu Leu  
                     20                    25                    30  
 His Gln Leu Leu His Gln Val Ile Lys Xaa Gly Lys His Ile Val  
                     35                    40                    45  
 Asp Arg Asp Ala Gly Val Gly His Ala Gln Asp Ala Val Glu Leu Gly  
                     50                    55                    60  
 Arg Asp Glu Gly Xaa Xaa Arg Leu Leu Gly Gly Phe Pro Glu Arg Leu  
     65                    70                    75                    80  
 Pro Leu His Leu Asp Ala Ser Gln Ala Arg Gln Thr  
                     85                    90

<210> 709  
 <211> 115  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (50)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (70)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE

&lt;222&gt; (86)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (100)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 709

Met	Gln	Pro	Pro	Ser	Leu	Leu	Leu	Leu	Val	Leu	Gly	Leu	Leu	Ala	Ala
1				5					10					15	

Pro	Ala	Ala	Ala	Leu	Val	Arg	Ile	Pro	Leu	His	Lys	Phe	Thr	Ser	Val
			20					25					30		

Arg	Arg	Thr	Met	Ser	Glu	Leu	Gly	Gly	Pro	Val	Glu	Asp	Leu	Ile	Ala
		35					40					45			

Arg	Xaa	Pro	Ile	Ser	Lys	Tyr	Ala	Gln	Gly	Val	Pro	Ser	Val	Ala	Gly
	50					55					60				

Gly	Pro	Val	Pro	Glu	Xaa	Leu	Lys	Glu	Thr	Thr	Trp	Asn	Ala	Gln	Ile
65					70					75					80

Leu	Arg	Gly	Lys	Phe	Xaa	His	Pro	Gly	Thr	Pro	Pro	Arg	Lys	Leu	Leu
				85					90					95	

Pro	Pro	Val	Xaa	Pro	Phe	Glu	Lys	Arg	Gly	Ser	Phe	Pro	Thr	Leu	Leu
			100					105					110		

Gly	Ser	Pro
		115

&lt;210&gt; 710

&lt;211&gt; 410

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 710

Met	Gln	Pro	Pro	Ser	Leu	Leu	Leu	Leu	Val	Leu	Gly	Leu	Leu	Ala	Ala
1				5					10					15	

Pro	Ala	Ala	Ala	Leu	Val	Arg	Ile	Pro	Leu	His	Lys	Phe	Thr	Ser	Val
			20					25					30		

Arg	Arg	Thr	Met	Ser	Glu	Leu	Gly	Gly	Pro	Val	Glu	Asp	Leu	Ile	Ala
		35					40					45			

Arg	Gly	Pro	Ile	Ser	Lys	Tyr	Ala	Gln	Gly	Val	Pro	Ser	Val	Ala	Gly
	50					55					60				

Gly	Pro	Val	Pro	Glu	Val	Leu	Arg	Asn	Tyr	Met	Asp	Ala	Gln	Tyr	Tyr
65					70					75					80

Gly	Glu	Ile	Gly	Ile	Gly	Thr	Pro	Pro	Gln	Cys	Phe	Thr	Val	Val	Phe
				85					90					95	

Asp	Thr	Gly	Ser	Ser	Asn	Leu	Trp	Val	Pro	Ser	Ile	His	Cys	Lys	Leu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

100										105					110				
Leu	Asp	Ile	Ala	Cys	Trp	Ile	His	His	Lys	Tyr	Asn	Ser	Gly	Lys	Ser				
		115						120					125						
Ser	Thr	Tyr	Val	Lys	Asn	Gly	Thr	Ser	Phe	Asp	Ile	His	Tyr	Gly	Ser				
	130					135					140								
Gly	Ser	Leu	Ser	Gly	Tyr	Leu	Ser	Gln	Asp	Thr	Val	Ser	Val	Pro	Cys				
145					150					155					160				
Lys	Ser	Gly	Leu	Ser	Ser	Leu	Ala	Gly	Val	Lys	Val	Glu	Arg	Gln	Thr				
				165					170					175					
Phe	Gly	Glu	Ala	Thr	Lys	Gln	Pro	Gly	Ile	Thr	Phe	Ile	Ala	Ala	Lys				
			180					185					190						
Phe	Asp	Gly	Ile	Leu	Gly	Met	Ala	Tyr	Pro	Arg	Ile	Ser	Val	Asn	Asn				
		195					200					205							
Val	Leu	Pro	Val	Phe	Asp	Asn	Leu	Met	Gln	Gln	Lys	Leu	Val	Glu	Lys				
	210					215					220								
Asn	Ile	Phe	Ser	Phe	Tyr	Leu	Asn	Arg	Asp	Pro	Gly	Ala	Gln	Pro	Gly				
225					230					235					240				
Gly	Glu	Leu	Met	Leu	Gly	Gly	Thr	Asp	Ser	Lys	Tyr	Tyr	Lys	Gly	Pro				
			245						250					255					
Leu	Ser	Tyr	Leu	Asn	Val	Thr	Arg	Lys	Ala	Tyr	Trp	Gln	Val	His	Met				
			260					265					270						
Glu	Gln	Val	Asp	Val	Gly	Ser	Ser	Leu	Thr	Leu	Cys	Lys	Gly	Gly	Cys				
		275					280					285							
Glu	Ala	Ile	Val	Asp	Thr	Gly	Thr	Ser	Leu	Ile	Val	Gly	Pro	Val	Asp				
	290					295					300								
Glu	Val	Arg	Glu	Leu	Gln	Lys	Ala	Ile	Gly	Ala	Val	Pro	Leu	Ile	Gln				
305					310					315					320				
Gly	Glu	Tyr	Met	Ile	Pro	Cys	Glu	Lys	Val	Ser	Thr	Leu	Pro	Glu	Val				
			325						330					335					
Thr	Leu	Thr	Leu	Gly	Gly	Lys	Pro	Tyr	Lys	Leu	Ser	Ser	Glu	Asp	Tyr				
			340					345					350						
Thr	Leu	Lys	Val	Ser	Gln	Gly	Gly	Lys	Ser	Ile	Cys	Leu	Ser	Gly	Phe				
		355					360					365							
Met	Gly	Met	Asp	Ile	Pro	Pro	Pro	Gly	Gly	Pro	Leu	Trp	Ile	Leu	Gly				
	370					375					380								
Asp	Val	Phe	Ile	Gly	Arg	Tyr	Tyr	Thr	Val	Phe	Asp	Arg	Asp	Gln	Asn				
385					390					395					400				
Arg	Val	Gly	Leu	Ala	Glu	Ala	Thr	Arg	Leu										
			405						410										

<210> 711  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (25)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (77)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (79)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 711  
 Ala Ala Arg Glu Gly Ala Pro Pro Pro Cys Pro Thr Ser Ala Ile Gly  
           1                  5                  10                  15  
 Arg Ala Ser Leu Ser Leu Arg Asp Xaa Gly Arg Gly Leu Arg Asp Ala  
                   20                  25                  30  
 Arg Arg Glu Lys Arg Arg Gly Val Arg Gly Gln Asp Gly Gly Asp Tyr  
           35                  40                  45  
 Gly Trp Cys Gly Pro Ala Arg Gly Arg Gly Val Ala Ala Lys Gly Thr  
           50                  55                  60  
 Ala Glu Gly Pro Thr Gly Glu Asn Arg Ala Gln Gly Xaa Lys Xaa Gly  
           65                  70                  75                  80  
 Val Arg Val Ala Val Glu Ala Ser Ser Val Arg Gly Pro Gly Arg Ala  
                   85                  90                  95

<210> 712  
 <211> 453  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (432)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 712  
 Met Arg Met Ala Ser Ile Met Val Trp Val Met Ile Ile Met Val Ile  
           1                  5                  10                  15  
 Leu Val Leu Gly Tyr Gly Ile Phe His Cys Tyr Met Glu Tyr Ser Arg

20					25					30					
Leu	Arg	Gly	Glu	Ala	Gly	Ser	Asp	Val	Ser	Leu	Val	Asp	Leu	Gly	Phe
		35					40					45			
Gln	Thr	Asp	Phe	Arg	Val	Tyr	Leu	His	Leu	Arg	Gln	Thr	Trp	Leu	Ala
	50					55					60				
Phe	Met	Ile	Ile	Leu	Ser	Ile	Leu	Glu	Val	Ile	Ile	Ile	Leu	Leu	Leu
	65					70					75				80
Ile	Phe	Leu	Arg	Lys	Arg	Ile	Leu	Ile	Ala	Ile	Ala	Leu	Ile	Lys	Glu
				85					90					95	
Ala	Ser	Arg	Ala	Val	Gly	Tyr	Val	Met	Cys	Ser	Leu	Leu	Tyr	Pro	Leu
			100					105					110		
Val	Thr	Phe	Phe	Leu	Leu	Cys	Leu	Cys	Ile	Ala	Tyr	Trp	Ala	Ser	Thr
		115					120					125			
Ala	Val	Phe	Leu	Ser	Thr	Ser	Asn	Glu	Ala	Val	Tyr	Lys	Ile	Phe	Asp
	130					135					140				
Asp	Ser	Pro	Cys	Pro	Phe	Thr	Ala	Lys	Thr	Cys	Asn	Pro	Glu	Thr	Phe
	145					150					155				160
Pro	Ser	Ser	Asn	Glu	Ser	Arg	Gln	Cys	Pro	Asn	Ala	Arg	Cys	Gln	Phe
			165						170					175	
Ala	Phe	Tyr	Gly	Gly	Glu	Ser	Gly	Tyr	His	Arg	Ala	Leu	Leu	Gly	Leu
			180					185					190		
Gln	Ile	Phe	Asn	Ala	Phe	Met	Phe	Phe	Trp	Leu	Ala	Asn	Phe	Val	Leu
		195					200					205			
Ala	Leu	Gly	Gln	Val	Thr	Leu	Ala	Gly	Ala	Phe	Ala	Ser	Tyr	Tyr	Trp
	210					215					220				
Ala	Leu	Arg	Lys	Pro	Asp	Asp	Leu	Pro	Ala	Phe	Pro	Leu	Phe	Ser	Ala
	225					230					235				240
Phe	Gly	Arg	Ala	Leu	Arg	Tyr	His	Thr	Gly	Ser	Leu	Ala	Phe	Gly	Ala
			245						250					255	
Leu	Ile	Leu	Ala	Ile	Val	Gln	Ile	Ile	Arg	Val	Ile	Leu	Glu	Tyr	Leu
			260					265					270		
Asp	Gln	Arg	Leu	Lys	Ala	Ala	Glu	Asn	Lys	Phe	Ala	Lys	Cys	Leu	Met
	275						280					285			
Thr	Cys	Leu	Lys	Cys	Cys	Phe	Trp	Cys	Leu	Glu	Lys	Phe	Ile	Lys	Phe
	290					295					300				
Leu	Asn	Arg	Asn	Ala	Tyr	Ile	Met	Ile	Ala	Ile	Tyr	Gly	Thr	Asn	Phe
	305					310					315				320
Cys	Thr	Ser	Ala	Arg	Asn	Ala	Phe	Phe	Leu	Leu	Met	Arg	Asn	Ile	Ile
			325						330					335	
Arg	Val	Ala	Val	Leu	Asp	Lys	Val	Thr	Asp	Phe	Leu	Phe	Leu	Leu	Gly



340 345 350  
 Lys Leu Leu Ile Val Gly Ser Val Gly Ile Leu Ala Phe Phe Phe Phe  
 355 360 365  
 Thr His Arg Ile Arg Ile Val Gln Asp Thr Ala Pro Pro Leu Asn Tyr  
 370 375 380  
 Tyr Trp Val Pro Ile Leu Thr Val Ile Val Gly Ser Tyr Leu Ile Ala  
 385 390 395 400  
 His Gly Phe Phe Ser Val Tyr Gly Met Cys Val Asp Thr Leu Phe Leu  
 405 410 415  
 Cys Phe Leu Glu Asp Leu Glu Arg Asn Asp Gly Ser Ala Glu Arg Xaa  
 420 425 430  
 Tyr Phe Met Ser Ser Thr Leu Lys Lys Leu Leu Asn Lys Thr Asn Lys  
 435 440 445  
 Lys Ala Ala Glu Ser  
 450

<210> 713  
 <211> 453  
 <212> PRT  
 <213> Homo sapiens

<400> 713

Met Arg Met Ala Ser Ile Met Val Trp Val Met Ile Ile Met Val Ile  
 1 5 10 15  
 Leu Val Leu Gly Tyr Gly Ile Phe His Cys Tyr Met Glu Tyr Ser Arg  
 20 25 30  
 Leu Arg Gly Glu Ala Gly Ser Asp Val Ser Leu Val Asp Leu Gly Phe  
 35 40 45  
 Gln Thr Asp Phe Arg Val Tyr Leu His Leu Arg Gln Thr Trp Leu Ala  
 50 55 60  
 Phe Met Ile Ile Leu Ser Ile Leu Glu Val Ile Ile Ile Leu Leu Leu  
 65 70 75 80  
 Ile Phe Leu Arg Lys Arg Ile Leu Ile Ala Ile Ala Leu Ile Lys Glu  
 85 90 95  
 Ala Ser Arg Ala Val Gly Tyr Val Met Cys Ser Leu Leu Tyr Pro Leu  
 100 105 110  
 Val Thr Phe Phe Leu Leu Cys Leu Cys Ile Ala Tyr Trp Ala Ser Thr  
 115 120 125  
 Ala Val Phe Leu Ser Thr Ser Asn Glu Ala Val Tyr Lys Ile Phe Asp  
 130 135 140  
 Asp Ser Pro Cys Pro Phe Thr Ala Lys Thr Cys Asn Pro Glu Thr Phe  
 145 150 155 160

Pro Ser Ser Asn Glu Ser Arg Gln Cys Pro Asn Ala Arg Cys Gln Phe  
 165 170 175  
 Ala Phe Tyr Gly Gly Glu Ser Gly Tyr His Arg Ala Leu Leu Gly Leu  
 180 185 190  
 Gln Ile Phe Asn Ala Phe Met Phe Phe Trp Leu Ala Asn Phe Val Leu  
 195 200 205  
 Ala Leu Gly Gln Val Thr Leu Ala Gly Ala Phe Ala Ser Tyr Tyr Trp  
 210 215 220  
 Ala Leu Arg Lys Pro Asp Asp Leu Pro Ala Phe Pro Leu Phe Ser Ala  
 225 230 235 240  
 Phe Gly Arg Ala Leu Arg Tyr His Thr Gly Ser Leu Ala Phe Gly Ala  
 245 250 255  
 Leu Ile Leu Ala Ile Val Gln Ile Ile Arg Val Ile Leu Glu Tyr Leu  
 260 265 270  
 Asp Gln Arg Leu Lys Ala Ala Glu Asn Lys Phe Ala Lys Cys Leu Met  
 275 280 285  
 Thr Cys Leu Lys Cys Cys Phe Trp Cys Leu Glu Lys Phe Ile Lys Phe  
 290 295 300  
 Leu Asn Arg Asn Ala Tyr Ile Met Ile Ala Ile Tyr Gly Thr Asn Phe  
 305 310 315 320  
 Cys Thr Ser Ala Arg Asn Ala Phe Phe Leu Leu Met Arg Asn Ile Ile  
 325 330 335  
 Arg Val Ala Val Leu Asp Lys Val Thr Asp Phe Leu Phe Leu Leu Gly  
 340 345 350  
 Lys Leu Leu Ile Val Gly Ser Val Gly Ile Leu Ala Phe Phe Phe Phe  
 355 360 365  
 Thr His Arg Ile Arg Ile Val Gln Asp Thr Ala Pro Pro Leu Asn Tyr  
 370 375 380  
 Tyr Trp Val Pro Ile Leu Thr Val Ile Val Gly Ser Tyr Leu Ile Ala  
 385 390 395 400  
 His Gly Phe Phe Ser Val Tyr Gly Met Cys Val Asp Thr Leu Phe Leu  
 405 410 415  
 Cys Phe Leu Glu Asp Leu Glu Arg Asn Asp Gly Ser Ala Glu Arg Pro  
 420 425 430  
 Tyr Phe Met Ser Ser Thr Leu Lys Lys Leu Leu Asn Lys Thr Asn Lys  
 435 440 445  
 Lys Ala Ala Glu Ser  
 450

<210> 714  
 <211> 84  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (56)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 714  
 Gly Arg Pro Thr Arg Pro Leu Ser Ala Gln Asn Ala Ser Val Asn Phe  
           1                          5                          10                          15  
 Trp Glu Ala Ser Thr Leu Ala Ala Gln Arg Glu Leu Ala Met Gln Phe  
                           20                          25                          30  
 Leu Cys Pro Gly Asn His Cys Phe Pro Cys His Leu Leu Cys Ala Gln  
                           35                          40                          45  
 Lys Arg Tyr Asn Ser His Gln Xaa Thr Pro Val Val Thr Ala His Leu  
           50                          55                          60  
 Val Cys Cys Val Phe Gln Gln Ser Val Leu Leu Gly Val Gln Leu Asn  
           65                          70                          75                          80  
 Arg Leu Gly Val

<210> 715  
 <211> 32  
 <212> PRT  
 <213> Homo sapiens

<400> 715  
 Met Trp Trp Ala Leu Leu Ala Cys Arg Phe Cys Cys Pro Arg Arg Cys  
           1                          5                          10                          15  
 Ala Ser Ala Trp Gln Gly Leu Pro Arg Arg Gly Ala Leu Phe Ser Gly  
                           20                          25                          30

<210> 716  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (26)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 716  
 Met Trp Trp Ala Leu Leu Ala Leu Pro Phe Leu Leu Pro Thr Ala Leu

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1           5           10           15
Arg Leu Cys Leu Ala Gly Leu Pro His Xaa Phe Arg His Thr Asn Arg
          20                    25                    30
Met Val Pro Gln Trp His Gln Ser Gly Asp Arg Pro Leu His Ser His
          35                    40                    45
Pro His Ser Arg Phe
          50

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<210> 717

<211> 744

<212> PRT

<213> Homo sapiens

<400> 717

Met 1	Trp	Trp	Ala	Leu 5	Leu	Ala	Leu	Pro	Phe	Leu	Leu	Pro	Thr	Ala	Leu 15
Arg	Leu	Cys	Leu 20	Ala	Gly	Pro	Pro	Pro	Glu	Arg	Gly	Pro	Leu	Phe	Trp
Leu	Thr	Arg	Gln	Asp	Ser	Arg	Glu 40	Ser	Gly	Ala	Ala	Asn 45	Ala	Thr	Val
Ser	Pro	Cys	Glu	Gly	Leu	Pro 55	Ser	Ala	Gly	Ala	Ser	Thr	Leu	Thr	Leu
Ala 65	Asn	Arg	Ser	Leu	Glu 70	Arg	Leu	Pro	Asn	Cys 75	Leu	Pro	Pro	Ala	Leu 80
Arg	Ser	Leu	Asp	Ala 85	Ser	His	Asn	Leu	Leu	Arg	Ala	Leu	Ser	Ala	Pro 95
Glu	Leu	Gly	Ala 100	Leu	Pro	Arg	Leu	Gln	Ala	Leu	Thr	Leu	Arg	His	Asn
Arg	Ile	Ala	Glu	Leu	Arg	Trp	Gly 120	Pro	Gly	Gly	Pro	Ala 125	Ala	Leu	His
Thr	Leu	Asp	Leu	Ser	Tyr	Asn 135	Gln	Leu	Ala	Thr	Leu	Pro	Pro	Cys	Ala
Gly 145	Pro	Ala	Leu	Pro	Gly	Leu	Arg	Ser	Leu	Ala	Leu	Ala	Gly	Asn	Pro 160
Leu	Gln	Ala	Leu	Gln 165	Pro	Gly	Ala	Phe	Ala	Cys	Leu	Pro	Ala	Leu	Arg 175
Leu	Leu	Asn	Leu 180	Ser	Gly	Thr	Ala	Leu	Gly	Arg	Asp	Leu	Gly	Ala	Gly 190
Ile	Ala	Asp	Gly	Ala	Phe	Ala	Gly 200	Ala	Gly	Gly	Ala	Leu 205	Glu	Val	Leu
Asp 210	Leu	Ser	Gly	Thr	Phe	Leu 215	Glu	Arg	Val	Arg	Ser	Gly	Trp	Ile	Arg 220

Asp Leu Pro Lys Leu Thr Ser Leu His Leu Arg Lys Met Pro Arg Leu  
 225 230 235 240  
 Arg Ile Leu Glu Ala Ala Val Phe Lys Met Thr Pro Asn Leu Gln Gln  
 245 250 255  
 Leu Asp Cys Gln Asp Ser Ser Ala Leu Thr Ser Val His Thr Gln Leu  
 260 265 270  
 Phe Gln Asp Thr Pro Arg Leu Gln Val Leu Leu Phe Gln Asn Cys Asn  
 275 280 285  
 Leu Ser Ser Phe Pro Pro Trp Ser Leu His Ser Ser Gln Val Leu Ser  
 290 295 300  
 Ile Ser Leu Phe Gly Asn Pro Leu Ile Cys Ser Cys Glu Leu Ser Trp  
 305 310 315 320  
 Leu Leu Arg Asp Ala Lys Arg Thr Val Leu Ser Arg Ala Ala Asp Thr  
 325 330 335  
 Val Cys Val Pro Ala Ser Gly Ser Arg Asp Thr Phe Ser Ala Pro Leu  
 340 345 350  
 Ser Leu Ser Gln Leu Pro Thr Val Cys His Leu Asp Gln Ser Thr Thr  
 355 360 365  
 Leu His Ser Ser Ser Pro Gln Ala Val Pro Phe Thr His Gln Pro Ser  
 370 375 380  
 Thr Gln Gly Leu Thr Thr Pro Trp Ser Thr Ala Pro Ser Thr Arg Pro  
 385 390 395 400  
 Val Glu Ala Glu Gln Ser Val Thr Lys Pro Leu Ser Phe Pro Thr Asp  
 405 410 415  
 Ser Ala Thr Gln Thr Ala Trp Ser His Ser Gly Ile Lys Val Gly Thr  
 420 425 430  
 Ala Arg Ser Thr Ala Ile Pro Thr Ala Asp Ser Ser Thr Ser Ser Ala  
 435 440 445  
 Pro Arg Arg Ala Ala Asn Thr Ala Gly Ala Glu His Gln Glu His Ala  
 450 455 460  
 Pro Met Leu Val His Ala Pro His Val Ser Ala Ala Ser Thr Pro Ser  
 465 470 475 480  
 Ala Ser Lys His Pro Gly Leu Phe Pro Thr Pro Trp Ser Gln Val Arg  
 485 490 495  
 Thr Pro Gln Pro Asp Tyr Arg Ala Gln Ala Thr Leu Gln Ala Pro His  
 500 505 510  
 Pro Ser Pro Ser Glu Gly Ala Ile Pro Val Leu Leu Leu Asp Glu Ser  
 515 520 525  
 Ser Glu Glu Glu Glu Glu Gly Gln Lys Glu Glu Val Gly Ala Pro Pro  
 530 535 540

Gln Asp Val Pro Cys Asp Tyr His Pro Cys Lys His Leu Gln Thr Pro  
 545 550 555 560  
 Cys Ala Glu Leu Gln Arg Arg Ser Arg Cys Arg Cys Pro Gly Leu Ser  
 565 570 575  
 Gly Glu Asp Ser Leu Pro Asp Pro Pro Arg Leu Gln Ala Val Thr Glu  
 580 585 590  
 Thr Thr Asp Thr Ser Ala Leu Val Arg Trp Cys Ala Pro Asn Ser Val  
 595 600 605  
 Val His Gly Tyr Gln Ile His Tyr Ser Pro Glu Gly Trp Ala Glu Asn  
 610 615 620  
 Gln Ser Val Thr Val Val Ala Asp Ile Tyr Ala Thr Ala Arg Gln His  
 625 630 635 640  
 Pro Leu Tyr Gly Leu Ser Pro Gly Thr Met Tyr Arg Val Cys Val Leu  
 645 650 655  
 Ala Ala Asn Arg Ala Gly Leu Ser Gln Pro Val Gln Ala Ser Gly Trp  
 660 665 670  
 Thr Arg Ala Cys Ala Ala Phe Thr Thr Lys Pro Ser Phe Val Leu Val  
 675 680 685  
 Phe Ala Gly Leu Cys Ala Ala Cys Gly Leu Leu Leu Val Thr Thr Leu  
 690 695 700  
 Leu Leu Ala Ala Cys Leu Cys Arg Arg Ser Arg Thr Val Arg Leu Gln  
 705 710 715 720  
 Arg Tyr Asn Thr His Leu Val Ala Tyr Lys Asn Pro Ala Phe Asp Tyr  
 725 730 735  
 Pro Leu Lys Leu Gln Thr Leu Ser  
 740

&lt;210&gt; 718

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 718

Ala Ile His Phe Thr Gln Gln Asp Met Pro Gln Ile Arg Arg Gln Ile  
 1 5 10 15  
 Tyr Lys Glu Leu Cys His Ala Asn Ser Leu Cys Glu Arg Arg Ile Pro  
 20 25 30  
 Gly Leu Lys Pro Met Val Lys Gly Met Gly Thr Trp Gly Thr Leu Pro  
 35 40 45  
 Ser Arg Glu Thr Pro Val Pro Leu Leu Pro Leu Pro Leu Pro Val Pro  
 50 55 60

Tyr Gly Phe Ser Tyr Leu Asn Val Leu Ile Asp Phe Cys Ile Phe Phe  
 65 70 75 80  
 Ser Leu Arg Glu Tyr Leu Leu Ile Phe Asp Val Gln Gly Val Ala Met  
 85 90 95  
 Glu Gln Pro Leu Leu Pro Leu Leu Gly Arg Ser Leu Ala Leu Trp Pro  
 100 105 110  
 Gly Trp Gly Gly His Pro Pro Ser Arg Val Gln Gly Arg Gly Gln Glu  
 115 120 125  
 His Leu Cys Trp Gly Gly Gly Arg Ala Lys Gly Val Cys Leu Pro Asp  
 130 135 140  
 Ile Gln Thr Leu Phe Tyr Thr Tyr Ile  
 145 150

<210> 719  
 <211> 46  
 <212> PRT  
 <213> Homo sapiens

<400> 719  
 Met Arg Met Lys Met Arg Lys Arg Lys Trp Gln Leu Gly Gly Cys Pro  
 1 5 10 15  
 Pro Asp Gly Val Ser Trp Glu Leu Pro Ser Gly Leu Val Leu Pro Ala  
 20 25 30  
 Leu Leu Ile Glu Lys Pro Ala Pro Ser Ala Ala Ala Glu Pro  
 35 40 45

<210> 720  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<400> 720  
 Gly Val Ser Trp Glu Gly Thr Pro Met Ser Pro Phe Pro Phe Met Gly  
 1 5 10 15  
 Leu Gly Ser Gly Val Arg Gly Ser His Ser Glu Phe Ala Val Thr Gln  
 20 25 30  
 Leu Leu Val Asp Leu Pro Thr Lys Phe Gly His Val Leu Leu Gly Glu  
 35 40 45  
 Ala Glu Trp Leu Arg Gln Gly Gln Met Leu Ala Val Leu Gln His Lys  
 50 55 60  
 Ser Thr Thr Val Thr Val Ile Ile Leu Pro Gly His Ile His Phe Glu  
 65 70 75 80  
 Val Thr Phe Pro Ala Leu Val Glu Ile Gln Ser Val Phe Leu Tyr Arg  
 85 90 95

Leu Cys Leu

<210> 721  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

<400> 721  
 Met Asp Tyr Gly Gly Leu Gln Ser Leu Leu Trp Thr Leu Thr Leu Ala  
     1                    5                    10                    15  
 Ser Ser Pro Val Leu Phe Pro Met Ala Leu Gly Asp Pro Pro Gly Gln  
                     20                    25                    30  
 Lys Gly Ser Gly Val Trp His Pro Leu Met Pro Ala Ser Ser Ser Ala  
                     35                    40                    45  
 Met Cys Ala Ala Ser Gly Thr Met Trp Pro Arg Ser Tyr Phe Arg Ala  
     50                    55                    60  
 Gln Ile Trp Ala Pro Gln Lys Arg Gln Ser Gly Pro Gly Arg Lys Pro  
     65                    70                    75                    80  
 Ala Ser Thr Ala Pro Cys Gly Arg Ser Met  
                     85                    90

<210> 722  
 <211> 288  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (10)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (268)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (271)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (273)



<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (274)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (276)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (286)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 722

Phe Ser Ser Ser Ala Cys Pro Ser Val Xaa Ser Leu Phe Val Xaa Leu  
1 5 10 15

Gly Lys Asn Pro His Asp Ala Gln Gly His Pro Arg Ala Ser Glu Asp  
20 25 30

Gln Pro Ser Ser Gly Lys Pro Val Thr Ser Tyr Pro Gly Glu Cys Gly  
35 40 45

Phe Val Phe Thr Lys Glu Ala Ser Leu Glu Ile Arg Asp Met Leu Leu  
50 55 60

Ala Asn Lys Val Pro Ala Ala Arg Ala Gly Ala Ile Ala Pro Cys  
65 70 75 80

Glu Val Thr Val Pro Ala Gln Asn Thr Gly Leu Gly Pro Glu Lys Thr  
85 90 95

Ser Phe Phe Gln Ala Leu Gly Ile Thr Thr Lys Ile Ser Arg Gly Thr  
100 105 110

Ile Glu Ile Leu Ser Asp Val Gln Leu Ile Lys Thr Gly Asp Lys Val  
115 120 125

Gly Ala Ser Glu Ala Thr Leu Leu Asn Met Leu Asn Ile Ser Pro Phe  
130 135 140

Ser Phe Gly Leu Ile Ile Gln Gln Val Phe Asp Asn Gly Ser Ile Tyr  
145 150 155 160

Asn Pro Glu Val Leu Asp Ile Thr Glu Glu Thr Leu His Ser Arg Phe  
165 170 175

Leu Glu Gly Val Arg Asn Val Ala Ser Val Cys Leu Gln Ile Gly Tyr  
180 185 190

Pro Thr Val Ala Ser Val Pro His Ser Ile Ile Asn Gly Tyr Lys Arg  
195 200 205

Val Leu Ala Leu Ser Val Glu Thr Asp Tyr Thr Phe Pro Leu Ala Glu  
210 215 220

Lys Val Lys Ala Phe Leu Ala Asp Pro Ser Ala Phe Val Ala Ala Ala  
 225 230 235 240  
 Pro Val Ala Ala Ala Thr Thr Ala Ala Pro Ala Ala Ala Ala Ala Pro  
 245 250 255  
 Ala Lys Val Glu Ala Lys Glu Glu Ser Glu Glu Xaa Asp Glu Xaa Ile  
 260 265 270  
 Xaa Xaa Ser Xaa Ile Ser Lys Ser Asn Asn Ser Ser Gln Xaa Ile Val  
 275 280 285

<210> 723  
 <211> 112  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (71)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (103)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (112)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 723  
 Met Lys Thr Leu Leu Leu Leu Val Gly Leu Leu Leu Thr Trp Glu Asn  
 1 5 10 15  
 Gly Arg Val Leu Gly Asp Gln Met Val Ser Asp Thr Glu Leu Gln Glu  
 20 25 30  
 Met Ser Thr Glu Gly Ser Lys Tyr Ile Asn Arg Glu Ile Lys Asn Ala  
 35 40 45  
 Leu Lys Gly Val Lys Gln Ile Lys Thr Leu Ile Glu Gln Thr Asn Glu  
 50 55 60  
 Glu Arg Lys Ser Leu Leu Xaa Asn Leu Glu Glu Ala Lys Lys Lys Lys  
 65 70 75 80  
 Glu Asp Ala Leu Asn Asp Thr Lys Asp Ser Glu Met Lys Leu Lys Ala  
 85 90 95  
 Ser Pro Gly Val Phe Asn Xaa Thr Leu Asp Gly Pro Leu Gly Gly Xaa  
 100 105 110

<210> 724  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<400> 724  
 Leu Leu Leu Val Gly Leu Gln Gln Leu Val Val Gln Ala Trp  
     1                    5                    10

<210> 725  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 725  
 Leu Leu Val Val Leu Leu Ser  
     1                    5

<210> 726  
 <211> 139  
 <212> PRT  
 <213> Homo sapiens

<400> 726  
 Met Lys Thr Leu Leu Leu Leu Val Gly Leu Leu Leu Thr Trp Glu Asn  
     1                    5                    10                    15  
 Gly Arg Val Leu Gly Asp Gln Met Val Ser Asp Thr Glu Leu Gln Glu  
                     20                    25                    30  
 Met Ser Thr Glu Gly Ser Lys Tyr Ile Asn Arg Glu Ile Lys Asn Ala  
                     35                    40                    45  
 Leu Lys Gly Val Lys Gln Ile Lys Thr Leu Ile Glu Gln Thr Asn Glu  
     50                    55                    60  
 Glu Arg Lys Ser Leu Leu Thr Asn Leu Glu Glu Ala Lys Lys Lys Lys  
     65                    70                    75                    80  
 Glu Asp Ala Leu Asn Asp Thr Lys Asp Ser Glu Met Lys Leu Lys Ala  
                     85                    90                    95  
 Ser Gln Gly Val Cys Asn Asp Thr Met Met Ala Leu Trp Glu Glu Cys  
                     100                    105                    110  
 Lys Pro Cys Leu Lys Gln Thr Trp Gly Lys Gly Leu Arg Pro Ser Leu  
     115                    120                    125  
 Gln Lys Gln His Arg Ala Gly Trp Pro Pro Gly  
     130                    135

<210> 727  
 <211> 112  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (103)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (112)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 727  
 Met Lys Thr Leu Leu Leu Leu Val Gly Leu Leu Leu Thr Trp Glu Asn  
     1                    5                    10                    15  
 Gly Arg Val Leu Gly Asp Gln Met Val Ser Asp Thr Glu Leu Gln Glu  
                     20                    25                    30  
 Met Ser Thr Glu Gly Ser Lys Tyr Ile Asn Arg Glu Ile Lys Asn Ala  
                     35                    40                    45  
 Leu Lys Gly Val Lys Gln Ile Lys Thr Leu Ile Glu Gln Thr Asn Glu  
     50                    55                    60  
 Glu Arg Lys Ser Leu Leu Thr Asn Leu Glu Glu Ala Lys Lys Lys Lys  
     65                    70                    75                    80  
 Glu Asp Ala Leu Asn Asp Thr Lys Asp Ser Glu Met Lys Leu Lys Ala  
                     85                    90                    95  
 Ser Pro Gly Val Phe Asn Xaa Thr Leu Asp Gly Pro Leu Gly Gly Xaa  
                     100                    105                    110

<210> 728  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

<400> 728  
 Met Leu Leu Leu Tyr Leu  
     1                    5

<210> 729  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<400> 729

Pro Gln Gly Pro Asn Asp Val Thr Ala Lys Leu Leu Cys Pro  
 1 5 10

<210> 730

<211> 67

<212> PRT

<213> Homo sapiens

<400> 730

Met Ala Pro Ser Gly Pro Leu Leu Leu Val Leu Leu Val Pro Leu Ala  
 1 5 10 15

Ala Ala Arg Pro Gly Pro Thr Ser Val Pro Ala Gly Ala Ala Ala Cys  
 20 25 30

Pro Cys Gly Gly Thr Ser Cys Arg Gly Trp Gly Ala Gly Pro Thr Pro  
 35 40 45

Gly Arg Thr Ser Thr Cys Pro His Leu Thr Cys Pro Arg Ala Gly Thr  
 50 55 60

Gly Ala Thr  
 65

<210> 731

<211> 129

<212> PRT

<213> Homo sapiens

<400> 731

Met Ala Pro Ser Gly Pro Leu Leu Leu Val Leu Leu Val Pro Leu Ala  
 1 5 10 15

Ala Ala Arg Ala Gly Pro Tyr Phe Arg Pro Gly Arg Gly Cys Arg Leu  
 20 25 30

Pro Leu Arg Gly Asp Gln Leu Ser Gly Leu Gly Arg Arg Thr Tyr Pro  
 35 40 45

Arg Pro His Glu Tyr Leu Ser Pro Ser Asp Leu Pro Lys Ser Trp Asp  
 50 55 60

Trp Arg Asn Val Asn Gly Val Asn Tyr Ala Ser Ala Thr Arg Asn Gln  
 65 70 75 80

His Ile Pro Gln Tyr Cys Gly Ser Cys Trp Ala His Gly Ser Thr Ser  
 85 90 95

Ala Met Ala Gly Pro Asp Gln His Gln Glu Lys Gly Gly Val Ala Leu  
 100 105 110

His Pro Ala Val Arg Ala Ala Arg Pro Arg Leu Arg Gln Arg Gly Leu  
 115 120 125

Leu

&lt;210&gt; 732

&lt;211&gt; 208

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 732

Met Gly Leu Gly Ala Arg Gly Ala Trp Ala Ala Leu Leu Leu Gly Thr  
 1 5 10 15

Leu Gln Val Leu Ala Leu Leu Gly Ala Ala His Glu Ser Ala Ala Met  
 20 25 30

Ala Ala Ser Ala Asn Ile Glu Asn Ser Gly Leu Pro His Asn Ser Ser  
 35 40 45

Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser Asp His Thr Asn  
 50 55 60

Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr Ser Val Ala Ser Asp  
 65 70 75 80

Ser Ser Asn Thr Thr Val Thr Thr Met Lys Pro Thr Ala Ala Ser Asn  
 85 90 95

Thr Thr Thr Pro Gly Met Val Ser Thr Asn Met Thr Ser Thr Thr Leu  
 100 105 110

Lys Ser Thr Pro Lys Thr Thr Ser Val Ser Gln Asn Thr Ser Gln Ile  
 115 120 125

Ser Thr Ser Thr Met Thr Val Thr His Asn Ser Ser Val Thr Ser Ala  
 130 135 140

Ala Ser Ser Val Thr Ile Thr Thr Thr Met His Ser Glu Ala Lys Lys  
 145 150 155 160

Gly Ser Lys Phe Asp Thr Gly Ser Phe Val Gly Gly Ile Val Leu Thr  
 165 170 175

Leu Gly Val Leu Ser Ile Leu Tyr Ile Gly Cys Lys Met Tyr Tyr Ser  
 180 185 190

Arg Arg Gly Ile Arg Tyr Arg Thr Ile Asp Glu His Asp Ala Ile Ile  
 195 200 205

&lt;210&gt; 733

&lt;211&gt; 208

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 733

Met Gly Leu Gly Ala Arg Gly Ala Trp Ala Ala Leu Leu Leu Gly Thr

1	5	10	15
Leu Gln Val	Leu Ala Leu Leu Gly	Ala Ala His Glu Ser	Ala Ala Met
20	25	30	
Ala Ala Ser	Ala Asn Ile Glu Asn Ser	Gly Leu Pro His	Asn Ser Ser
35	40	45	
Ala Asn Ser	Thr Glu Thr Leu Gln His	Val Pro Ser Asp	His Thr Asn
50	55	60	
Glu Thr Ser	Asn Ser Thr Val Lys Pro	Pro Thr Ser Val	Ala Ser Asp
65	70	75	80
Ser Ser Asn	Thr Thr Val Thr Thr Met	Lys Pro Thr Ala	Ala Ser Asn
85	90	95	
Thr Thr Thr	Pro Gly Met Val Ser Thr	Asn Met Thr Ser	Thr Thr Leu
100	105	110	
Lys Ser Thr	Pro Lys Thr Thr Ser Val	Ser Gln Asn Thr	Ser Gln Ile
115	120	125	
Ser Thr Ser	Thr Met Thr Val Thr His	Asn Ser Ser Val	Thr Ser Ala
130	135	140	
Ala Ser Ser	Val Thr Ile Thr Thr Thr	Met His Ser Glu	Ala Lys Lys
145	150	155	160
Gly Ser Lys	Phe Asp Thr Gly Ser Phe	Val Gly Gly Ile	Val Leu Thr
165	170	175	
Leu Gly Val	Leu Ser Ile Leu Tyr Ile	Gly Cys Lys Met	Tyr Tyr Ser
180	185	190	
Arg Arg Gly	Ile Arg Tyr Arg Thr Ile	Asp Glu His Asp	Ala Ile Ile
195	200	205	

&lt;210&gt; 734

&lt;211&gt; 208

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 734

Met Gly Leu	Gly Ala Arg Gly	Ala Trp Ala	Ala Leu Leu	Leu Gly Thr
1	5	10	15	
Leu Gln Val	Leu Ala Leu Leu Gly	Ala Ala His	Glu Ser Ala	Ala Met
20	25	30		
Ala Ala Ser	Ala Asn Ile Glu Asn	Ser Gly Leu Pro	His Asn Ser	Ser
35	40	45		
Ala Asn Ser	Thr Glu Thr Leu Gln	His Val Pro Ser	Asp His Thr	Asn
50	55	60		

Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr Ser Val Ala Ser Asp  
 65 70 75 80  
 Ser Ser Asn Thr Thr Val Thr Thr Met Lys Pro Thr Ala Ala Ser Asn  
 85 90 95  
 Thr Thr Thr Pro Gly Met Val Ser Thr Asn Met Thr Ser Thr Thr Leu  
 100 105 110  
 Lys Ser Thr Pro Lys Thr Thr Ser Val Ser Gln Asn Thr Ser Gln Ile  
 115 120 125  
 Ser Thr Ser Thr Met Thr Val Thr His Asn Ser Ser Val Thr Ser Ala  
 130 135 140  
 Ala Ser Ser Val Thr Ile Thr Thr Thr Met His Ser Glu Ala Lys Lys  
 145 150 155 160  
 Gly Ser Lys Phe Asp Thr Gly Ser Phe Val Gly Gly Ile Val Leu Thr  
 165 170 175  
 Leu Gly Val Leu Ser Ile Leu Tyr Ile Gly Cys Lys Met Tyr Tyr Ser  
 180 185 190  
 Arg Arg Gly Ile Arg Tyr Arg Thr Ile Asp Glu His Asp Ala Ile Ile  
 195 200 205

<210> 735  
 <211> 208  
 <212> PRT  
 <213> Homo sapiens

<400> 735  
 Met Gly Leu Gly Ala Arg Gly Ala Trp Ala Ala Leu Leu Leu Gly Thr  
 1 5 10 15  
 Leu Gln Val Leu Ala Leu Leu Gly Ala Ala His Glu Ser Ala Ala Met  
 20 25 30  
 Ala Ala Ser Ala Asn Ile Glu Asn Ser Gly Leu Pro His Asn Ser Ser  
 35 40 45  
 Ala Asn Ser Thr Glu Thr Leu Gln His Val Pro Ser Asp His Thr Asn  
 50 55 60  
 Glu Thr Ser Asn Ser Thr Val Lys Pro Pro Thr Ser Val Ala Ser Asp  
 65 70 75 80  
 Ser Ser Asn Thr Thr Val Thr Thr Met Lys Pro Thr Ala Ala Ser Asn  
 85 90 95  
 Thr Thr Thr Pro Gly Met Val Ser Thr Asn Met Thr Ser Thr Thr Leu  
 100 105 110



Lys Ser Thr Pro Lys Thr Thr Ser Val Ser Gln Asn Thr Ser Gln Ile  
 115 120 125  
 Ser Thr Ser Thr Met Thr Val Thr His Asn Ser Ser Val Thr Ser Ala  
 130 135 140  
 Ala Ser Ser Val Thr Ile Thr Thr Thr Met His Ser Glu Ala Lys Lys  
 145 150 155 160  
 Gly Ser Lys Phe Asp Thr Gly Ser Phe Val Gly Gly Ile Val Leu Thr  
 165 170 175  
 Leu Gly Val Leu Ser Ile Leu Tyr Ile Gly Cys Lys Met Tyr Tyr Ser  
 180 185 190  
 Arg Arg Gly Ile Arg Tyr Arg Thr Ile Asp Glu His Asp Ala Ile Ile  
 195 200 205

<210> 736  
 <211> 365  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (144)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (201)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 736  
 Met Phe Val Gly Leu Met Ala Phe Leu Leu Ser Phe Tyr Leu Ile Phe  
 1 5 10 15  
 Thr Asn Glu Gly Arg Ala Leu Lys Thr Ala Thr Ser Leu Ala Glu Gly  
 20 25 30  
 Leu Ser Leu Val Val Ser Pro Asp Ser Ile His Ser Val Ala Pro Glu  
 35 40 45  
 Asn Glu Gly Arg Leu Val His Ile Ile Gly Ala Leu Arg Thr Ser Lys  
 50 55 60  
 Leu Leu Ser Asp Pro Asn Tyr Gly Val His Leu Pro Ala Val Lys Leu  
 65 70 75 80  
 Arg Arg His Val Glu Met Tyr Gln Trp Val Glu Thr Glu Glu Ser Arg  
 85 90 95  
 Glu Tyr Thr Glu Asp Gly Gln Val Lys Lys Glu Thr Arg Tyr Ser Tyr  
 100 105 110

Asn Thr Glu Trp Arg Ser Glu Ile Ile Asn Ser Lys Asn Phe Asp Arg  
 115 120 125  
 Glu Ile Gly His Lys Asn Pro Ser Ala Met Ala Val Glu Ser Phe Xaa  
 130 135 140  
 Ala Thr Ala Pro Phe Val Gln Ile Gly Arg Phe Phe Leu Ser Ser Gly  
 145 150 155 160  
 Leu Ile Asp Lys Val Asp Asn Phe Lys Ser Leu Ser Leu Ser Lys Leu  
 165 170 175  
 Glu Asp Pro His Val Asp Ile Ile Arg Arg Gly Asp Phe Phe Tyr His  
 180 185 190  
 Ser Glu Asn Pro Lys Tyr Pro Glu Xaa Gly Asp Leu Arg Val Ser Phe  
 195 200 205  
 Ser Tyr Ala Gly Leu Ser Gly Asp Asp Pro Asp Leu Gly Pro Ala His  
 210 215 220  
 Val Val Thr Val Ile Ala Arg Gln Arg Gly Asp Gln Leu Val Pro Phe  
 225 230 235 240  
 Ser Thr Lys Ser Gly Asp Thr Leu Leu Leu Leu His His Gly Asp Phe  
 245 250 255  
 Ser Ala Glu Glu Val Phe His Arg Glu Leu Arg Ser Asn Ser Met Lys  
 260 265 270  
 Thr Trp Gly Leu Arg Ala Ala Gly Trp Met Ala Met Phe Met Gly Leu  
 275 280 285  
 Asn Leu Met Thr Arg Ile Leu Tyr Thr Leu Val Asp Trp Phe Pro Val  
 290 295 300  
 Phe Arg Asp Leu Val Asn Ile Gly Leu Lys Ala Phe Ala Phe Cys Val  
 305 310 315 320  
 Ala Thr Ser Leu Thr Leu Leu Thr Val Ala Ala Gly Trp Leu Phe Tyr  
 325 330 335  
 Arg Pro Leu Trp Ala Leu Leu Ile Ala Gly Leu Ala Leu Val Pro Ile  
 340 345 350  
 Leu Val Ala Arg Thr Arg Val Pro Ala Lys Lys Leu Glu  
 355 360 365

&lt;210&gt; 737

&lt;211&gt; 365

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 737

Met Phe Val Gly Leu Met Ala Phe Leu Leu Ser Phe Tyr Leu Ile Phe  
 1 5 10 15

Thr Asn Glu Gly Arg Ala Leu Lys Thr Ala Thr Ser Leu Ala Glu Gly

20										25					30				
Leu	Ser	Leu	Val	Val	Ser	Pro	Asp	Ser	Ile	His	Ser	Val	Ala	Pro	Glu				
		35					40					45							
Asn	Glu	Gly	Arg	Leu	Val	His	Ile	Ile	Gly	Ala	Leu	Arg	Thr	Ser	Lys				
	50					55					60								
Leu	Leu	Ser	Asp	Pro	Asn	Tyr	Gly	Val	His	Leu	Pro	Ala	Val	Lys	Leu				
65					70					75					80				
Arg	Arg	His	Val	Glu	Met	Tyr	Gln	Trp	Val	Glu	Thr	Glu	Glu	Ser	Arg				
			85						90					95					
Glu	Tyr	Thr	Glu	Asp	Gly	Gln	Val	Lys	Lys	Glu	Thr	Arg	Tyr	Ser	Tyr				
			100					105					110						
Asn	Thr	Glu	Trp	Arg	Ser	Glu	Ile	Ile	Asn	Ser	Lys	Asn	Phe	Asp	Arg				
		115					120					125							
Glu	Ile	Gly	His	Lys	Asn	Pro	Ser	Ala	Met	Ala	Val	Glu	Ser	Phe	Met				
	130					135					140								
Ala	Thr	Ala	Pro	Phe	Val	Gln	Ile	Gly	Arg	Phe	Phe	Leu	Ser	Ser	Gly				
145					150					155					160				
Leu	Ile	Asp	Lys	Val	Asp	Asn	Phe	Lys	Ser	Leu	Ser	Leu	Ser	Lys	Leu				
				165				170						175					
Glu	Asp	Pro	His	Val	Asp	Ile	Ile	Arg	Arg	Gly	Asp	Phe	Phe	Tyr	His				
			180					185						190					
Ser	Glu	Asn	Pro	Lys	Tyr	Pro	Glu	Val	Gly	Asp	Leu	Arg	Val	Ser	Phe				
		195					200					205							
Ser	Tyr	Ala	Gly	Leu	Ser	Gly	Asp	Asp	Pro	Asp	Leu	Gly	Pro	Ala	His				
	210					215					220								
Val	Val	Thr	Val	Ile	Ala	Arg	Gln	Arg	Gly	Asp	Gln	Leu	Val	Pro	Phe				
225					230					235					240				
Ser	Thr	Lys	Ser	Gly	Asp	Thr	Leu	Leu	Leu	Leu	His	His	Gly	Asp	Phe				
				245				250						255					
Ser	Ala	Glu	Glu	Val	Phe	His	Arg	Glu	Leu	Arg	Ser	Asn	Ser	Met	Lys				
			260					265					270						
Thr	Trp	Gly	Leu	Arg	Ala	Ala	Gly	Trp	Met	Ala	Met	Phe	Met	Gly	Leu				
		275					280					285							
Asn	Leu	Met	Thr	Arg	Ile	Leu	Tyr	Thr	Leu	Val	Asp	Trp	Phe	Pro	Val				
	290					295					300								
Phe	Arg	Asp	Leu	Val	Asn	Ile	Gly	Leu	Lys	Ala	Phe	Ala	Phe	Cys	Val				
305					310					315					320				
Ala	Thr	Ser	Leu	Thr	Leu	Leu	Thr	Val	Ala	Ala	Gly	Trp	Leu	Phe	Tyr				
				325					330					335					
Arg	Pro	Leu	Trp	Ala	Leu	Leu	Ile	Ala	Gly	Leu	Ala	Leu	Val	Pro	Ile				

340 345 350

Leu Val Ala Arg Thr Arg Val Pro Ala Lys Lys Leu Glu  
 355 360 365

<210> 738  
 <211> 34  
 <212> PRT  
 <213> Homo sapiens

<400> 738  
 Met Leu Trp Pro Cys Cys Pro Ser Pro Leu Pro Ile Trp Ala Ser Pro  
 1 5 10 15  
 Ser Pro Arg Leu Thr Trp Trp Cys Leu Leu Ser Cys Phe Gly Thr Gln  
 20 25 30

Gly Cys

<210> 739  
 <211> 34  
 <212> PRT  
 <213> Homo sapiens

<400> 739  
 Met Leu Trp Pro Cys Cys Pro Ser Pro Leu Pro Ile Trp Ala Ser Pro  
 1 5 10 15  
 Ser Pro Arg Leu Thr Trp Trp Cys Leu Leu Ser Cys Phe Gly Thr Gln  
 20 25 30

Gly Cys

<210> 740  
 <211> 41  
 <212> PRT  
 <213> Homo sapiens

<400> 740  
 Met Arg His Cys Cys Trp Leu Trp Ser Ser Cys Met Leu Trp Glu Pro  
 1 5 10 15  
 Ser Thr Thr Leu Gly Ser Ser Pro Arg Leu Val Glu Arg Trp Gln Ser  
 20 25 30

Cys Arg Trp Thr Pro Cys Cys Pro Lys  
 35 40

<210> 741  
 <211> 41

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 741

Met Arg His Cys Cys Trp Leu Trp Ser Ser Cys Met Leu Trp Glu Pro  
 1 5 10 15

Ser Thr Thr Leu Gly Ser Ser Pro Arg Leu Val Glu Arg Trp Gln Ser  
 20 25 30

Cys Arg Trp Thr Pro Cys Cys Pro Lys  
 35 40

&lt;210&gt; 742

&lt;211&gt; 18

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 742

Val His Lys Ser Ala Gly Leu Leu Trp Glu Ala Thr Gly Glu Gly Pro  
 1 5 10 15

Gly Ser

&lt;210&gt; 743

&lt;211&gt; 197

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 743

Val Glu Ile Val His Glu Leu Lys Gly Glu Gly Lys Ala Gln Arg Lys  
 1 5 10 15

Ile Ser Ala Ile His Ile Leu Asp Val Leu Val Leu Asn Gly Thr Asp  
 20 25 30

Val Arg Glu Gln His Phe Asn Gln Arg Ile Gln Leu Ala Glu Lys Phe  
 35 40 45

Val Lys Ala Val Ser Lys Pro Ser Arg Pro Asp Met Asn Pro Ile Arg  
 50 55 60

Val Lys Glu Val Tyr Arg Leu Glu Glu Met Glu Lys Ile Phe Val Arg  
 65 70 75 80

Leu Glu Met Lys Ile Ile Lys Gly Ser Ser Gly Thr Pro Lys Leu Ser  
 85 90 95

Tyr Thr Gly Arg Asp Asp Arg His Phe Val Pro Met Gly Leu Tyr Ile  
 100 105 110

Val Arg Thr Val Asn Glu Pro Trp Thr Met Gly Phe Ser Lys Ser Phe  
 115 120 125

Lys Lys Lys Phe Phe Tyr Asn Lys Lys Thr Lys Asp Ser Thr Phe Asp

130                      135                      140  
 Leu Pro Ala Asp Ser Ile Ala Pro Phe His Ile Cys Tyr Tyr Gly Arg  
 145                      150                      155                      160  
 Leu Phe Trp Glu Trp Gly Asp Gly Ile Arg Val His Asp Ser Gln Lys  
                     165                      170                      175  
 Pro Gln Asp Gln Asp Lys Leu Ser Lys Glu Asp Val Leu Ser Phe Ile  
                     180                      185                      190  
 Gln Met His Arg Ala  
                     195

<210> 744  
 <211> 1  
 <212> PRT  
 <213> Homo sapiens

<400> 744  
 Asn  
 1

<210> 745  
 <211> 61  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (58)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 745  
 Met His Ser Lys Gln Thr Leu Leu Trp Lys Glu Leu Leu Leu Ala Ile  
     1                    5                    10                    15  
 Pro Cys Ile Ile Ala Ser Pro Arg Ser Leu Trp Pro Arg Trp Ala Ser  
                     20                    25                    30  
 Gly Lys Val Lys Asp Trp Val Asn Thr Ala Arg Val Gly Arg Thr Ser  
                     35                    40                    45  
 Leu Arg Leu Pro Val Arg Lys Val Glu Xaa Ala Trp Val  
     50                    55                    60

<210> 746  
 <211> 61  
 <212> PRT  
 <213> Homo sapiens

<400> 746  
 Met His Ser Lys Gln Thr Leu Leu Trp Lys Glu Leu Leu Leu Ala Ile  
     1                    5                    10                    15

Pro Cys Ile Ile Ala Ser Pro Arg Ser Leu Trp Pro Arg Trp Ala Ser  
                   20                                  25                                  30

Gly Lys Val Lys Asp Trp Val Asn Thr Ala Arg Val Gly Arg Thr Ser  
                   35                                  40                                  45

Leu Arg Leu Pro Val Arg Lys Val Glu Glu Ala Trp Val  
                   50                                  55                                  60

<210> 747

<211> 53

<212> PRT

<213> Homo sapiens

<400> 747

Asn Tyr Asn Arg Gly Gly Thr Phe Leu Tyr Gln Lys Ala Lys Ile Lys  
                   1                                  5                                  10                                  15

His His Val Leu Met Val Phe Tyr Lys Ser Thr Ser Asn Ser Thr Glu  
                   20                                  25                                  30

Ser Leu Ile Trp Ser Leu Leu Asn Ser Trp Ser Asp Lys Val Thr Phe  
                   35                                  40                                  45

Pro Lys Arg Val Arg  
                   50

<210> 748

<211> 56

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (35)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (42)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (46)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 748

Lys Ser Gln Met Gln Ser Phe Thr Ile Val Thr Ala Tyr Gly Arg Cys  
                   1                                  5                                  10                                  15

Leu Ser Leu Thr Cys Leu Pro Thr Leu Asn Gln Met Leu Val Phe Lys  
                   20                                  25                                  30

Ser Asn Xaa Ser Leu Val Ser Pro His Xaa Leu Thr Phe Xaa Asn Ile

35

40

45

Phe Ala Arg Phe Glu Asn Phe Gln  
 50 55

&lt;210&gt; 749

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 749

Phe Leu Val Cys Leu Leu Gly Pro Arg Ser  
 1 5 10

&lt;210&gt; 750

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 750

Thr Val Ala Ile Tyr Asp  
 1 5

&lt;210&gt; 751

&lt;211&gt; 46

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (45)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 751

Ile Asn His Val Phe Ile Trp Gly Ser Ile Ala Ile Tyr Phe Ser Ile  
 1 5 10 15

Leu Phe Thr Met His Ser Asn Gly Ile Phe Gly Ile Phe Pro Asn Gln  
 20 25 30

Phe Pro Phe Val Gly Asn Ala Arg His Ser Leu Thr Xaa Lys  
 35 40 45

&lt;210&gt; 752

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (94)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids



&lt;400&gt; 752

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Met Asn Thr Leu Val Leu Trp Ile Phe Gly Phe Leu Ile Cys Leu Gly
 1           5           10           15

Ile Ile Leu Ala Ile Gly Asn Ser Ile Trp Glu Ser Gln Thr Gly Asp
          20           25           30

Gln Phe Arg Thr Phe Leu Phe Trp Asn Glu Gly Glu Lys Ser Ser Val
          35           40           45

Phe Ser Gly Phe Leu Thr Phe Trp Ser Tyr Ile Ile Ile Leu Asn Thr
 50           55           60

Val Val Pro Ile Ser Leu Tyr Val Ser Val Glu Val Ile Arg Leu Gly
 65           70           75           80

His Ser Tyr Phe Ile Asn Trp Asp Arg Lys Met Tyr Tyr Xaa Arg Lys
          85           90           95

Ala Ile Pro Ala Val Ala Arg Thr Thr Thr Leu Asn Glu
          100           105

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&lt;210&gt; 753

&lt;211&gt; 937

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 753

```

Met Gln Asn Ser Gly Lys Thr Lys Phe Lys Arg Thr Ser Ile Asp Arg
 1           5           10           15

Leu Met Asn Thr Leu Val Leu Trp Ile Phe Gly Phe Leu Ile Cys Leu
          20           25           30

Gly Ile Ile Leu Ala Ile Gly Asn Ser Ile Trp Glu Ser Gln Thr Gly
          35           40           45

Asp Gln Phe Arg Thr Phe Leu Phe Trp Asn Glu Gly Glu Lys Ser Ser
 50           55           60

Val Phe Ser Gly Phe Leu Thr Phe Trp Ser Tyr Ile Ile Ile Leu Asn
 65           70           75           80

Thr Val Val Pro Ile Ser Leu Tyr Val Ser Val Glu Val Ile Arg Leu
          85           90           95

Gly His Ser Tyr Phe Ile Asn Trp Asp Arg Lys Met Tyr Tyr Ser Arg
          100           105           110

Lys Ala Ile Pro Ala Val Ala Arg Thr Thr Thr Leu Asn Glu Glu Leu
          115           120           125

Gly Gln Ile Glu Tyr Ile Phe Ser Asp Lys Thr Gly Thr Leu Thr Gln
          130           135           140

Asn Ile Met Thr Phe Lys Arg Cys Ser Ile Asn Gly Arg Ile Tyr Gly
          145           150           155           160

```

Glu Val His Asp Asp Leu Asp Gln Lys Thr Glu Ile Thr Gln Glu Lys  
 165 170 175  
 Glu Pro Val Asp Phe Ser Val Lys Ser Gln Ala Asp Arg Glu Phe Gln  
 180 185 190  
 Phe Phe Asp His Asn Leu Met Glu Ser Ile Lys Met Gly Asp Pro Lys  
 195 200 205  
 Val His Glu Phe Leu Arg Leu Leu Ala Leu Cys His Thr Val Met Ser  
 210 215 220  
 Glu Glu Asn Ser Ala Gly Glu Leu Ile Tyr Gln Val Gln Ser Pro Asp  
 225 230 235 240  
 Glu Gly Ala Leu Val Thr Ala Ala Arg Asn Phe Gly Phe Ile Phe Lys  
 245 250 255  
 Ser Arg Thr Pro Glu Thr Ile Thr Ile Glu Glu Leu Gly Thr Leu Val  
 260 265 270  
 Thr Tyr Gln Leu Leu Ala Phe Leu Asp Phe Asn Asn Thr Arg Lys Arg  
 275 280 285  
 Met Ser Val Ile Val Arg Asn Pro Glu Gly Gln Ile Lys Leu Tyr Ser  
 290 295 300  
 Lys Gly Ala Asp Thr Ile Leu Phe Glu Lys Leu His Pro Ser Asn Glu  
 305 310 315 320  
 Val Leu Leu Ser Leu Thr Ser Asp His Leu Ser Glu Phe Ala Gly Glu  
 325 330 335  
 Gly Leu Arg Thr Leu Ala Ile Ala Tyr Arg Asp Leu Asp Asp Lys Tyr  
 340 345 350  
 Phe Lys Glu Trp His Lys Met Leu Glu Asp Ala Asn Val Ala Thr Glu  
 355 360 365  
 Glu Arg Asp Glu Arg Ile Ala Gly Leu Tyr Glu Glu Ile Glu Arg Asp  
 370 375 380  
 Leu Met Leu Leu Gly Ala Thr Ala Val Glu Asp Lys Leu Gln Glu Gly  
 385 390 395 400  
 Val Ile Glu Thr Val Thr Ser Leu Ser Leu Ala Asn Ile Lys Ile Trp  
 405 410 415  
 Val Leu Thr Gly Asp Lys Gln Glu Thr Ala Ile Asn Ile Gly Tyr Ala  
 420 425 430  
 Cys Asn Met Leu Thr Asp Asp Met Asn Asp Val Phe Val Ile Ala Gly  
 435 440 445  
 Asn Asn Ala Val Glu Val Arg Glu Glu Leu Arg Lys Ala Lys Gln Asn  
 450 455 460  
 Leu Phe Gly Gln Asn Arg Asn Phe Ser Asn Gly His Val Val Cys Glu  
 465 470 475 480

Lys Lys Gln Gln Leu Glu Leu Asp Ser Ile Val Glu Glu Thr Ile Thr  
 485 490 495  
 Gly Asp Tyr Ala Leu Ile Ile Asn Gly His Ser Leu Ala His Ala Leu  
 500 505 510  
 Glu Ser Asp Val Lys Asn Asp Leu Leu Glu Leu Ala Cys Met Cys Lys  
 515 520 525  
 Thr Val Ile Cys Cys Arg Val Thr Pro Leu Gln Lys Ala Gln Val Val  
 530 535 540  
 Glu Leu Val Lys Lys Tyr Arg Asn Ala Val Thr Leu Ala Ile Gly Asp  
 545 550 555 560  
 Gly Ala Asn Asp Val Ser Met Ile Lys Ser Ala His Ile Gly Val Gly  
 565 570 575  
 Ile Ser Gly Gln Glu Gly Leu Gln Ala Val Leu Ala Ser Asp Tyr Ser  
 580 585 590  
 Phe Ala Gln Phe Arg Tyr Leu Gln Arg Leu Leu Leu Val His Gly Arg  
 595 600 605  
 Trp Ser Tyr Phe Arg Met Cys Lys Phe Leu Cys Tyr Phe Phe Tyr Lys  
 610 615 620  
 Asn Phe Ala Phe Thr Leu Val His Phe Trp Phe Gly Phe Phe Cys Gly  
 625 630 635 640  
 Phe Ser Ala Gln Thr Val Tyr Asp Gln Trp Phe Ile Thr Leu Phe Asn  
 645 650 655  
 Ile Val Tyr Thr Ser Leu Pro Val Leu Ala Met Gly Ile Phe Asp Gln  
 660 665 670  
 Asp Val Ser Asp Gln Asn Ser Val Asp Cys Pro Gln Leu Tyr Lys Pro  
 675 680 685  
 Gly Gln Leu Asn Leu Leu Phe Asn Lys Arg Lys Phe Phe Ile Cys Val  
 690 695 700  
 Met His Gly Ile Tyr Thr Ser Leu Val Leu Phe Phe Ile Pro Tyr Gly  
 705 710 715 720  
 Ala Phe Tyr Asn Val Ala Gly Glu Asp Gly Gln His Ile Ala Asp Tyr  
 725 730 735  
 Gln Ser Phe Ala Val Thr Met Ala Thr Ser Leu Val Ile Val Val Ser  
 740 745 750  
 Val Gln Ile Ala Leu Asp Thr Ser Tyr Trp Thr Phe Ile Asn His Val  
 755 760 765  
 Phe Ile Trp Gly Ser Ile Ala Ile Tyr Phe Ser Ile Leu Phe Thr Met  
 770 775 780  
 His Ser Asn Gly Ile Phe Gly Ile Phe Pro Asn Gln Phe Pro Phe Val  
 785 790 795 800

Phe Asp Gly Phe Arg Ala Asp Tyr Leu Lys Asn Tyr Glu Phe Pro His  
406

35					40					45					
Leu	Gln	Asn	Phe	Ile	Lys	Glu	Gly	Val	Leu	Val	Glu	His	Val	Lys	Asn
50					55					60					
Val	Phe	Ile	Thr	Lys	Thr	Phe	Pro	Asn	His	Tyr	Ser	Ile	Val	Thr	Gly
65					70					75					80
Leu	Tyr	Glu	Glu	Ser	His	Gly	Ile	Val	Ala	Asn	Ser	Met	Tyr	Asp	Ala
85					90					95					
Val	Thr	Lys	Lys	His	Phe	Ser	Asp	Ser	Asn	Asp	Lys	Asp	Pro	Phe	Trp
100					105					110					
Trp	Asn	Glu	Ala	Val	Pro	Ile	Trp	Val	Thr	Asn	Gln	Leu	Gln	Glu	Thr
115					120					125					
Asp	Gln	Val	Ala	Ala	Ala	Met	Trp	Ala							
130					135										

```
<210> 756
<211> 6
<212> PRT
<213> Homo sapiens
```

```
<400> 756
Lys Met Met Met Ile Leu
  1                               5
```

```
<210> 757 .
<211> 101
<212> PRT
<213> Homo sapiens
```

```
<220>
<221> SITE
<222> (97)
<223> Xaa equals any of the naturally occurring L-amino acids
```

```

<400> 757
Ser Phe Ser Phe Lys Val Val Asp Val Phe Glu Val Ser Lys Ile Val
 1          5          10          15
Ala Glu Tyr Phe Ile Leu Gly Pro Cys Asn Gly Val Ser Phe Asn Asp
      20          25          30
Cys Ile Ile Val Ile Gly Gly Tyr Glu Phe Gln Lys Ser Ile Leu Gly
      35          40          45
Ile Gln Leu Met Ser Gly Phe Tyr Ile Gly Trp Asn Arg Lys Val Cys
      50          55          60
Pro Val Ser Ile Leu Thr Leu Ser Thr Arg His Leu Pro Ile Cys Leu
 65          70          75          80
Ser Leu Arg Ser Gln Asn Ile Asn Ser Asn Cys Lys Leu Ser Lys Asn

```

85

90

95

Xaa Lys Ser Ile Cys  
100

&lt;210&gt; 758

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 758

Leu Leu Thr Ile Leu Leu Trp Ser Ala Leu Ser Tyr  
1 5 10

&lt;210&gt; 759

&lt;211&gt; 453

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 759

Met Lys Leu Leu Val Ile Leu Leu Phe Ser Gly Leu Ile Thr Gly Phe  
1 5 10 15

Arg Ser Asp Ser Ser Ser Ser Leu Pro Pro Lys Leu Leu Leu Val Ser  
20 25 30

Phe Asp Gly Phe Arg Ala Asp Tyr Leu Lys Asn Tyr Glu Phe Pro His  
35 40 45

Leu Gln Asn Phe Ile Lys Glu Gly Val Leu Val Glu His Val Lys Asn  
50 55 60

Val Phe Ile Thr Lys Thr Phe Pro Asn His Tyr Ser Ile Val Thr Gly  
65 70 75 80

Leu Tyr Glu Glu Ser His Gly Ile Val Ala Asn Ser Met Tyr Asp Ala  
85 90 95

Val Thr Lys Lys His Phe Ser Asp Ser Asn Asp Lys Asp Pro Phe Trp  
100 105 110

Trp Asn Glu Ala Val Pro Ile Trp Val Thr Asn Gln Leu Gln Glu Asn  
115 120 125

Arg Ser Ser Ala Ala Ala Met Trp Pro Gly Thr Asp Val Pro Ile His  
130 135 140

Asp Thr Ile Ser Ser Tyr Phe Met Asn Tyr Asn Ser Ser Val Ser Phe  
145 150 155 160

Glu Glu Arg Leu Asn Asn Ile Thr Met Trp Leu Asn Asn Ser Asn Pro  
165 170 175

Pro Val Thr Phe Ala Thr Leu Tyr Trp Glu Glu Pro Asp Ala Ser Gly  
180 185 190

His Lys Tyr Gly Pro Glu Asp Lys Glu Asn Met Ser Arg Val Leu Lys  
 195 200 205  
 Lys Ile Asp Asp Leu Ile Gly Asp Leu Val Gln Arg Leu Lys Met Leu  
 210 215 220  
 Gly Leu Trp Glu Asn Leu Asn Val Ile Ile Thr Ser Asp His Gly Met  
 225 230 235 240  
 Thr Gln Cys Ser Gln Asp Arg Leu Ile Asn Leu Asp Ser Cys Ile Asp  
 245 250 255  
 His Ser Tyr Tyr Thr Leu Ile Asp Leu Ser Pro Val Ala Ala Ile Leu  
 260 265 270  
 Pro Lys Ile Asn Arg Thr Glu Val Tyr Asn Lys Leu Lys Asn Cys Ser  
 275 280 285  
 Pro His Met Asn Val Tyr Leu Lys Glu Asp Ile Pro Asn Arg Phe Tyr  
 290 295 300  
 Tyr Gln His Asn Asp Arg Ile Gln Pro Ile Ile Leu Val Ala Asp Glu  
 305 310 315 320  
 Gly Trp Thr Ile Val Leu Asn Glu Ser Ser Gln Lys Leu Gly Asp His  
 325 330 335  
 Gly Tyr Asp Asn Ser Leu Pro Ser Met His Pro Phe Leu Ala Ala His  
 340 345 350  
 Gly Pro Ala Phe His Lys Gly Tyr Lys His Ser Thr Ile Asn Ile Val  
 355 360 365  
 Asp Ile Tyr Pro Met Met Cys His Ile Leu Gly Leu Lys Pro His Pro  
 370 375 380  
 Asn Asn Gly Thr Phe Gly His Thr Lys Cys Leu Leu Val Asp Gln Trp  
 385 390 395 400  
 Cys Ile Asn Leu Pro Glu Ala Ile Ala Ile Val Ile Gly Ser Leu Leu  
 405 410 415  
 Val Leu Thr Met Leu Thr Cys Leu Ile Ile Ile Met Gln Asn Arg Leu  
 420 425 430  
 Ser Val Pro Arg Pro Phe Ser Arg Leu Gln Leu Gln Glu Asp Asp Asp  
 435 440 445  
 Asp Pro Leu Ile Gly  
 450

&lt;210&gt; 760

&lt;211&gt; 11

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 760

Trp His Ile Leu Gln Met Lys Gly Leu Thr Trp

1

5

10

&lt;210&gt; 761

&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 761

Phe Ala Ile Phe Ile Tyr Phe Ser Val Ser Tyr Ile Ala Asp Gly Asn  
 1 5 10 15

Glu Phe Glu Val Pro Arg Ala Glu Asp Pro Cys Leu Leu Cys Phe  
 20 25 30

&lt;210&gt; 762

&lt;211&gt; 245

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (110)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 762

Met Arg Ile Phe Ala Val Phe Ile Phe Met Thr Tyr Trp His Leu Leu  
 1 5 10 15

Asn Ala Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr  
 20 25 30

Gly Ser Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu  
 35 40 45

Asp Leu Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile  
 50 55 60

Ile Gln Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser  
 65 70 75 80

Tyr Arg Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn  
 85 90 95

Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Xaa Val Tyr  
 100 105 110

Arg Cys Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val  
 115 120 125

Lys Val Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val  
 130 135 140

Asp Pro Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr  
 145 150 155 160

Pro Lys Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser



165 170 175  
 Gly Lys Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn  
 180 185 190  
 Val Thr Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr  
 195 200 205  
 Cys Thr Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu  
 210 215 220  
 Val Ile Pro Gly Asn Ile Leu Asn Val Ser Ile Lys Ile Cys Leu Thr  
 225 230 235 240  
 Leu Ser Pro Ser Thr  
 245

<210> 763  
 <211> 290  
 <212> PRT  
 <213> Homo sapiens

<400> 763  
 Met Arg Ile Phe Ala Val Phe Ile Phe Met Thr Tyr Trp His Leu Leu  
 1 5 10 15  
 Asn Ala Phe Thr Val Thr Val Pro Lys Asp Leu Tyr Val Val Glu Tyr  
 20 25 30  
 Gly Ser Asn Met Thr Ile Glu Cys Lys Phe Pro Val Glu Lys Gln Leu  
 35 40 45  
 Asp Leu Ala Ala Leu Ile Val Tyr Trp Glu Met Glu Asp Lys Asn Ile  
 50 55 60  
 Ile Gln Phe Val His Gly Glu Glu Asp Leu Lys Val Gln His Ser Ser  
 65 70 75 80  
 Tyr Arg Gln Arg Ala Arg Leu Leu Lys Asp Gln Leu Ser Leu Gly Asn  
 85 90 95  
 Ala Ala Leu Gln Ile Thr Asp Val Lys Leu Gln Asp Ala Gly Val Tyr  
 100 105 110  
 Arg Cys Met Ile Ser Tyr Gly Gly Ala Asp Tyr Lys Arg Ile Thr Val  
 115 120 125  
 Lys Val Asn Ala Pro Tyr Asn Lys Ile Asn Gln Arg Ile Leu Val Val  
 130 135 140  
 Asp Pro Val Thr Ser Glu His Glu Leu Thr Cys Gln Ala Glu Gly Tyr  
 145 150 155 160  
 Pro Lys Ala Glu Val Ile Trp Thr Ser Ser Asp His Gln Val Leu Ser  
 165 170 175  
 Gly Lys Thr Thr Thr Thr Asn Ser Lys Arg Glu Glu Lys Leu Phe Asn  
 180 185 190

Val Thr Ser Thr Leu Arg Ile Asn Thr Thr Thr Asn Glu Ile Phe Tyr  
 195 200 205

Cys Thr Phe Arg Arg Leu Asp Pro Glu Glu Asn His Thr Ala Glu Leu  
 210 215 220

Val Ile Pro Glu Leu Pro Leu Ala His Pro Pro Asn Glu Arg Thr His  
 225 230 235 240

Leu Val Ile Leu Gly Ala Ile Leu Leu Cys Leu Gly Val Ala Leu Thr  
 245 250 255

Phe Ile Phe Arg Leu Arg Lys Gly Arg Met Met Asp Val Lys Lys Cys  
 260 265 270

Gly Ile Gln Asp Thr Asn Ser Lys Lys Gln Ser Asp Thr His Leu Glu  
 275 280 285

Glu Thr  
 290

&lt;210&gt; 764

&lt;211&gt; 91

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (40)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 764

Ser Val Ser Lys Lys Lys Lys Lys Lys Lys Val Phe Cys Ile Leu Tyr  
 1 5 10 15

Lys Leu Val Val Val Gly Ser Arg Gly Leu Ser Thr Asp Asp Leu Met  
 20 25 30

Arg Ser Val Ser Arg Phe Ala Xaa Ser Gln Thr Phe Val Leu Leu Asn  
 35 40 45

Ser Ser Ser Phe Phe Ser Phe Leu Glu Thr Glu Ser Ser Ser Val Thr  
 50 55 60

Arg Leu Glu Cys Ser Gly Thr Ile Lys Ala Tyr Cys Ser Leu Tyr Leu  
 65 70 75 80

Pro Gly Ser Arg Asn Pro Pro Thr Leu Ala Ser  
 85 90

&lt;210&gt; 765

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 765

Met Val Tyr Cys Val Val Ser Pro Arg Arg Ala Thr Leu Phe Cys Val  
 1 5 10 15

Leu Leu Leu Gly Thr Arg Cys Glu Ile Ile Ser Val Arg Ser Ser Phe  
 20 25 30

Gly Glu Tyr Asp Lys Ile Asn Ser Ile Leu Lys Gly Leu Leu Lys Ile  
 35 40 45

Pro Phe Asn Glu Phe  
 50

&lt;210&gt; 766

&lt;211&gt; 95

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 766

Pro Pro Arg Thr Arg Leu Phe Leu Val Ile Leu Phe Cys Cys Phe Arg  
 1 5 10 15

Arg Asn Asp Thr Ser Phe Cys Phe Phe Glu Glu Lys Val Phe His Val  
 20 25 30

Thr Val Ala Arg Thr Asn Thr Lys Arg Ser Arg Leu Gln Met Leu Gln  
 35 40 45

Ala Cys Ala Val Val Cys Val Cys Val Cys Val Cys Val Cys Val Cys  
 50 55 60

Thr Tyr Ile Tyr Gly Lys His Ile Tyr Cys Cys Ala Ala Arg Gly Lys  
 65 70 75 80

Pro Ala Lys Lys Cys Val Cys Leu Tyr Glu Met Phe Glu Lys Arg  
 85 90 95

&lt;210&gt; 767

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 767

Met Val Tyr Cys Val Val Ser Pro Arg Arg Ala Thr Leu Phe Cys Val  
 1 5 10 15

Leu Leu Leu Gly Thr Arg Cys Glu Ile Ile Ser Val Arg Ser Ser Phe  
 20 25 30

Gly Glu Tyr Asp Lys Ile Asn Ser Ile Leu Lys Gly Leu Leu Lys Ile  
 35 40 45

Pro Phe Asn Glu Phe  
 50

<210> 768  
 <211> 41  
 <212> PRT  
 <213> Homo sapiens

<400> 768  
 Met Pro Ser Gly Cys Arg Cys Leu His Leu Val Cys Leu Leu Cys Ile  
   1                  5                  10                  15  
 Leu Gly Ala Pro Gly Gln Pro Val Arg Ala Asp Asp Cys Ser Pro Thr  
                   20                  25                  30  
 Val Thr Trp Pro Thr Ala Ala Val Asn  
           35                  40

<210> 769  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 769  
 Pro Gly Leu Cys Ser Gln Leu His Val Pro Leu Leu Gly Gly Leu Cys  
   1                  5                  10                  15  
 Gly Cys Pro Leu  
                   20

<210> 770  
 <211> 383  
 <212> PRT  
 <213> Homo sapiens

<400> 770  
 Met Pro Ser Gly Cys Arg Cys Leu His Leu Val Cys Leu Leu Cys Ile  
   1                  5                  10                  15  
 Leu Gly Ala Pro Gly Gln Pro Val Arg Ala Asp Asp Cys Ser Ser His  
                   20                  25                  30  
 Cys Asp Leu Ala His Gly Cys Cys Ala Pro Asp Gly Ser Cys Arg Cys  
           35                  40                  45  
 Asp Pro Gly Trp Glu Gly Leu His Cys Glu Arg Cys Val Arg Met Pro  
   50                  55                  60  
 Gly Cys Gln His Gly Thr Cys His Gln Pro Trp Gln Cys Ile Cys His  
   65                  70                  75                  80  
 Ser Gly Trp Ala Gly Lys Phe Cys Asp Lys Asp Glu His Ile Cys Thr  
                   85                  90                  95  
 Thr Gln Ser Pro Cys Gln Asn Gly Gly Gln Cys Met Tyr Asp Gly Gly  
   100                  105                  110  
 Gly Glu Tyr His Cys Val Cys Leu Pro Gly Phe His Gly Arg Asp Cys

115	120	125																	
Glu Arg Lys Ala Gly Pro Cys	Glu Gln Ala Gly Ser Pro Cys Arg Asn																		
130	135	140																	
Gly Gly Gln Cys Gln Asp Asp	Gln Gly Phe Ala Leu Asn Phe Thr Cys																		
145	150	155																	
Arg Cys Leu Val Gly Phe Val Gly	Ala Arg Cys Glu Val Asn Val Asp																		
165	170	175																	
Asp Cys Leu Met Arg Pro Cys	Ala Asn Gly Ala Thr Cys Leu Asp Gly																		
180	185	190																	
Ile Asn Arg Phe Ser Cys Leu Cys	Pro Glu Gly Phe Ala Gly Arg Phe																		
195	200	205																	
Cys Thr Ile Asn Leu Asp Asp	Cys Ala Ser Arg Pro Cys Gln Arg Gly																		
210	215	220																	
Ala Arg Cys Arg Asp Arg Val	His Asp Phe Asp Cys Leu Cys Pro Ser																		
225	230	235																	
Gly Tyr Gly Gly Lys Thr Cys	Glu Leu Val Leu Pro Val Pro Asp Pro																		
245	250	255																	
Pro Thr Thr Val Asp Thr Pro	Leu Gly Pro Thr Ser Ala Val Val Val																		
260	265	270																	
Pro Ala Thr Gly Pro Ala Pro	His Ser Ala Gly Ala Gly Leu Leu Arg																		
275	280	285																	
Ile Ser Val Lys Glu Val Val	Arg Arg Gln Glu Ala Gly Leu Gly Glu																		
290	295	300																	
Pro Ser Leu Val Ala Leu Val	Val Phe Gly Ala Leu Thr Ala Ala Leu																		
305	310	315																	
Val Leu Ala Thr Val Leu Leu	Thr Leu Arg Ala Trp Arg Arg Gly Val																		
325	330	335																	
Cys Pro Pro Gly Pro Cys Cys	Tyr Pro Ala Pro His Tyr Ala Pro Ala																		
340	345	350																	
Cys Gln Asp Gln Glu Cys Gln	Val Ser Met Leu Pro Ala Gly Leu Pro																		
355	360	365																	
Leu Pro Arg Asp Leu Pro Pro	Glu Pro Gly Lys Thr Thr Ala Leu																		
370	375	380																	

&lt;210&gt; 771

&lt;211&gt; 10

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 771

Pro	Gln	Thr	Ala	Gly	Pro	Gln	Lys	Cys	Ala
1					5				10

<210> 772  
 <211> 10  
 <212> PRT  
 <213> Homo sapiens

<400> 772  
 Pro Phe Pro Ala Gly Pro His Ser Trp Ile  
 1 5 10

<210> 773  
 <211> 35  
 <212> PRT  
 <213> Homo sapiens

<400> 773  
 Met Gly Arg Gly Pro Trp Asp Ala Gly Pro Ser Arg Arg Leu Leu Pro  
 1 5 10 15  
 Leu Leu Leu Leu Leu Gly Leu Ala Arg Gly Ala Ala Glu Arg Arg Ala  
 20 25 30  
 Pro Thr Val  
 35

<210> 774  
 <211> 747  
 <212> PRT  
 <213> Homo sapiens

<400> 774  
 Met Gly Arg Gly Pro Trp Asp Ala Gly Pro Ser Arg Arg Leu Leu Pro  
 1 5 10 15  
 Leu Leu Leu Leu Leu Gly Leu Ala Arg Gly Ala Ala Gly Ala Pro Gly  
 20 25 30  
 Pro Asp Gly Leu Asp Val Cys Ala Thr Cys His Glu His Ala Thr Cys  
 35 40 45  
 Gln Gln Arg Glu Gly Lys Lys Ile Cys Ile Cys Asn Tyr Gly Phe Val  
 50 55 60  
 Gly Asn Gly Arg Thr Gln Cys Val Asp Lys Asn Glu Cys Gln Phe Gly  
 65 70 75 80  
 Ala Thr Leu Val Cys Gly Asn His Thr Ser Cys His Asn Thr Pro Gly  
 85 90 95  
 Gly Phe Tyr Cys Ile Cys Leu Glu Gly Tyr Arg Ala Thr Asn Asn Asn  
 100 105 110  
 Lys Thr Phe Ile Pro Asn Asp Gly Thr Phe Cys Thr Asp Ile Asp Glu  
 115 120 125

Cys Glu Val Ser Gly Leu Cys Arg His Gly Gly Arg Cys Val Asn Thr  
 130 135 140  
 His Gly Ser Phe Glu Cys Tyr Cys Met Asp Gly Tyr Leu Pro Arg Asn  
 145 150 155 160  
 Gly Pro Glu Pro Phe His Pro Thr Thr Asp Ala Thr Ser Cys Thr Glu  
 165 170 175  
 Ile Asp Cys Gly Thr Pro Pro Glu Val Pro Asp Gly Tyr Ile Ile Gly  
 180 185 190  
 Asn Tyr Thr Ser Ser Leu Gly Ser Gln Val Arg Tyr Ala Cys Arg Glu  
 195 200 205  
 Gly Phe Phe Ser Val Pro Glu Asp Thr Val Ser Ser Cys Thr Gly Leu  
 210 215 220  
 Gly Thr Trp Glu Ser Pro Lys Leu His Cys Gln Glu Ile Asn Cys Gly  
 225 230 235 240  
 Asn Pro Pro Glu Met Arg His Ala Ile Leu Val Gly Asn His Ser Ser  
 245 250 255  
 Arg Leu Gly Gly Val Ala Arg Tyr Val Cys Gln Glu Gly Phe Glu Ser  
 260 265 270  
 Pro Gly Gly Lys Ile Thr Ser Val Cys Thr Glu Lys Gly Thr Trp Arg  
 275 280 285  
 Glu Ser Thr Leu Thr Cys Thr Glu Ile Leu Thr Lys Ile Asn Asp Val  
 290 295 300  
 Ser Leu Phe Asn Asp Thr Cys Val Arg Trp Gln Ile Asn Ser Arg Arg  
 305 310 315 320  
 Ile Asn Pro Lys Ile Ser Tyr Val Ile Ser Ile Lys Gly Gln Arg Leu  
 325 330 335  
 Asp Pro Met Glu Ser Val Arg Glu Glu Thr Val Asn Leu Thr Thr Asp  
 340 345 350  
 Ser Arg Thr Pro Glu Val Cys Leu Ala Leu Tyr Pro Gly Thr Asn Tyr  
 355 360 365  
 Thr Val Asn Ile Ser Thr Ala Pro Pro Arg Arg Ser Met Pro Ala Val  
 370 375 380  
 Ile Gly Phe Gln Thr Ala Glu Val Asp Leu Leu Glu Asp Asp Gly Ser  
 385 390 395 400  
 Phe Asn Ile Ser Ile Phe Asn Glu Thr Cys Leu Lys Leu Asn Arg Arg  
 405 410 415  
 Ser Arg Lys Val Gly Ser Glu His Met Tyr Gln Phe Thr Val Leu Gly  
 420 425 430  
 Gln Arg Trp Tyr Leu Ala Asn Phe Ser His Ala Thr Ser Phe Asn Phe  
 435 440 445

Thr Thr Arg Glu Gln Val Pro Val Val Cys Leu Asp Leu Tyr Pro Thr  
 450 455 460  
 Thr Asp Tyr Thr Val Asn Val Thr Leu Leu Arg Ser Pro Lys Arg His  
 465 470 475 480  
 Ser Val Gln Ile Thr Ile Ala Thr Pro Pro Ala Val Lys Gln Thr Ile  
 485 490 495  
 Ser Asn Ile Ser Gly Phe Asn Glu Thr Cys Leu Arg Trp Arg Ser Ile  
 500 505 510  
 Lys Thr Ala Asp Met Glu Glu Met Tyr Leu Phe His Ile Trp Gly Gln  
 515 520 525  
 Arg Trp Tyr Gln Lys Glu Phe Ala Gln Glu Met Thr Phe Asn Ile Ser  
 530 535 540  
 Ser Ser Ser Arg Asp Pro Glu Val Cys Leu Asp Leu Arg Pro Gly Thr  
 545 550 555 560  
 Asn Tyr Asn Val Ser Leu Arg Ala Leu Ser Ser Glu Leu Pro Val Val  
 565 570 575  
 Ile Ser Leu Thr Thr Gln Ile Thr Glu Pro Pro Leu Pro Glu Val Glu  
 580 585 590  
 Phe Phe Thr Val His Arg Gly Pro Leu Pro Arg Leu Arg Leu Arg Lys  
 595 600 605  
 Ala Lys Glu Lys Asn Gly Pro Ile Ser Ser Tyr Gln Val Leu Val Leu  
 610 615 620  
 Pro Leu Ala Leu Gln Ser Thr Phe Ser Cys Asp Ser Glu Gly Ala Ser  
 625 630 635 640  
 Ser Phe Phe Ser Asn Ala Ser Asp Ala Asp Gly Tyr Val Ala Ala Glu  
 645 650 655  
 Leu Leu Ala Lys Asp Val Pro Asp Asp Ala Met Glu Ile Pro Ile Gly  
 660 665 670  
 Asp Arg Leu Tyr Tyr Gly Glu Tyr Tyr Asn Ala Pro Leu Lys Arg Gly  
 675 680 685  
 Ser Asp Tyr Cys Ile Ile Leu Arg Ile Thr Ser Glu Trp Asn Lys Val  
 690 695 700  
 Arg Arg His Ser Cys Ala Val Trp Ala Gln Val Lys Asp Ser Ser Leu  
 705 710 715 720  
 Met Leu Leu Gln Met Ala Gly Val Gly Leu Gly Ser Leu Ala Val Val  
 725 730 735  
 Ile Ile Leu Thr Phe Leu Ser Phe Ser Ala Val  
 740 745



419

Arg Leu Gln Ala Gln Ala Xaa Arg Arg Gly Tyr Leu Pro Arg Ser Cys  
 100 105 110

Met Ser Ser Met Ala Phe Phe Leu  
 115 120

<210> 778

<211> 269

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (236)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (257)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 778

Met Gly Thr Val Ser Ser Arg Arg Ser Trp Trp Pro Leu Pro Leu Leu  
 1 5 10 15

Leu Leu Leu Leu Leu Leu Leu Gly Pro Ala Gly Ala Arg Ala Gln Glu  
 20 25 30

Asp Glu Asp Gly Asp Tyr Glu Glu Leu Val Leu Ala Leu Arg Ser Glu  
 35 40 45

Glu Asp Gly Leu Ala Glu Ala Pro Glu His Gly Thr Thr Ala Thr Phe  
 50 55 60

His Arg Cys Ala Lys Asp Pro Trp Arg Leu Pro Gly Thr Tyr Val Val  
 65 70 75 80

Val Leu Lys Glu Glu Thr His Leu Ser Gln Ser Glu Arg Thr Ala Arg  
 85 90 95

Arg Leu Gln Ala Gln Ala Ala Arg Arg Gly Tyr Leu Thr Lys Ile Leu  
 100 105 110

His Val Phe His Gly Leu Leu Pro Gly Phe Leu Val Lys Met Ser Gly  
 115 120 125

Asp Leu Leu Glu Leu Ala Leu Lys Leu Pro His Val Asp Tyr Ile Glu  
 130 135 140

Glu Asp Ser Ser Val Phe Ala Gln Ser Ile Pro Trp Asn Leu Glu Arg  
 145 150 155 160

Ile Thr Pro Pro Arg Tyr Arg Ala Asp Glu Tyr Gln Pro Pro Asp Gly  
 165 170 175

Gly Ser Leu Val Glu Val Tyr Leu Leu Asp Thr Ser Ile Gln Ser Asp  
 180 185 190

His Arg Glu Ile Glu Gly Arg Val Met Val Thr Asp Phe Glu Asn Val  
 195 200 205

Pro Glu Glu Asp Gly Thr Arg Phe His Arg Gln Ala Ser Lys Cys Asp  
 210 215 220

Ser His Gly Pro Thr Trp Gln Gly Trp Ser Ala Xaa Gly Met Pro Ala  
 225 230 235 240

Trp Pro Arg Val Pro Ala Cys Ala Ala Cys Ala Cys Phe Pro Lys Lys  
 245 250 255

Xaa Pro Leu Leu Gly Gly Pro Pro Gln Lys Lys Gly Gly  
 260 265

&lt;210&gt; 779

&lt;211&gt; 107

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (92)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 779

Met Val Arg Tyr Thr Tyr Ser Met Leu Ser Val Ile Gly Ile Ser Tyr  
 1 5 10 15

Ala Val Leu Thr Trp Leu Ser Gln Thr Leu Trp Met Pro Ile Tyr Pro  
 20 25 30

Leu Cys Val Leu Ala Glu Ala Phe Ala Ile Tyr Gln Ser Leu Pro Tyr  
 35 40 45

Phe Glu Ser Phe Gly Thr Tyr Ser Thr Lys Leu Pro Phe Asp Leu Ser  
 50 55 60

Ile Tyr Phe Pro Tyr Val Leu Lys Ile Tyr Leu Met Met Leu Phe Ile  
 65 70 75 80

Gly Met Tyr Phe Thr Tyr Ser His Leu Tyr Ser Xaa Arg Arg Asp Ile  
 85 90 95

Leu Gly Ile Phe Pro Ile Lys Lys Lys Lys Met  
 100 105

&lt;210&gt; 780

&lt;211&gt; 37

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 780

Met Val Arg Tyr Thr Tyr Ser Met Leu Ser Val Ile Gly Ile Ser Tyr  
 1 5 10 15

Ala Val Leu Thr Trp Ala Gln Ser Asn Thr Met Asp Ala Asn Leu Ser  
                   20                  25                  30

Phe Val Cys Ser Cys  
                   35

<210> 781  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<400> 781  
 Met Val Arg Tyr Thr Tyr Ser Met Leu Ser Val Ile Gly Ile Ser Tyr  
   1                  5                  10                  15  
 Ala Val Leu Thr Trp Leu Ser Gln Thr Leu Trp Met Pro Ile Tyr Pro  
                   20                  25                  30  
 Leu Cys Val Leu Ala Glu Ala Phe Ala Ile Tyr Gln Ser Leu Pro Tyr  
                   35                  40                  45  
 Phe Glu Ser Phe Gly Thr Tyr Ser Thr Lys Leu Pro Phe Asp Leu Ser  
                   50                  55                  60  
 Ile Tyr Phe Pro Tyr Val Leu Lys Ile Tyr Leu Met Met Leu Phe Ile  
   65                  70                  75                  80  
 Gly Met Tyr Phe Thr Tyr Ser His Leu Tyr Ser Glu Arg Arg Asp Ile  
                   85                  90                  95  
 Leu Gly Ile Phe Pro Ile Lys Lys Lys Lys Met  
                   100                  105

<210> 782  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (40)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 782  
 Ser Asn Pro Ser His Ile Leu Met Ile Ser Ile Leu Leu Ser His Ala  
   1                  5                  10                  15  
 Ser Arg Gly Ala Gly Ala Asp Pro Lys Arg Ser Cys Cys Pro Gln Arg  
                   20                  25                  30  
 Val Gly Ser Arg Gly Arg Ala Xaa Val Arg Leu Thr Arg Leu Cys Ser  
                   35                  40                  45  
 Gln Pro Ser Pro His  
                   50

<210> 783  
 <211> 33  
 <212> PRT  
 <213> Homo sapiens

<400> 783  
 His His Val Ala Gln Ala Leu Pro Pro Ala Gly Ala Pro Arg Gly Arg  
 1 5 10 15  
 Pro His Gln Pro His Pro Ala Pro Val Gly Gln Gly Ser Pro Glu Arg  
 20 25 30

Gly

<210> 784  
 <211> 74  
 <212> PRT  
 <213> Homo sapiens

<400> 784  
 Met Gly Phe His His Val Ser Gln Ala Ala Leu Val Leu Leu Leu Leu  
 1 5 10 15  
 Leu Leu Leu Leu Leu Leu Phe Asp Thr Glu Ser Arg Ser Ser Leu Ala  
 20 25 30  
 Thr Glu Arg Asp Ser Ile Ser Lys Lys Lys Asn Lys Lys Thr Lys Lys  
 35 40 45  
 Lys Asn Arg Lys Glu Thr Lys Asn Val Val Leu Ile Leu Ile Asn Ser  
 50 55 60  
 Asn Ser Phe Met Trp Leu Ala Ala Ala Leu  
 65 70

<210> 785  
 <211> 74  
 <212> PRT  
 <213> Homo sapiens

<400> 785  
 Met Gly Phe His His Val Ser Gln Ala Ala Leu Val Leu Leu Leu Leu  
 1 5 10 15  
 Leu Leu Leu Leu Leu Leu Phe Asp Thr Glu Ser Arg Ser Ser Leu Ala  
 20 25 30  
 Thr Glu Arg Asp Ser Ile Ser Lys Lys Lys Asn Lys Lys Thr Lys Lys  
 35 40 45  
 Lys Asn Arg Lys Glu Thr Lys Asn Val Val Leu Ile Leu Ile Asn Ser  
 50 55 60

Asn Ser Phe Met Trp Leu Ala Ala Ala Leu  
 65 70

<210> 786  
 <211> 178  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (157)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (170)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (171)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (177)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 786  
 Met Ala Ala Pro Arg Gly Arg Ala Ala Pro Trp Thr Thr Ala Leu Leu  
 1 5 10 15

Leu Leu Leu Ala Ser Gln Val Leu Ser Pro Gly Ser Cys Ala Asp Glu  
 20 25 30

Glu Glu Val Pro Glu Glu Trp Val Leu Leu His Val Val Gln Gly Gln  
 35 40 45

Ile Gly Ala Gly Asn Tyr Ser Tyr Leu Arg Leu Asn His Glu Gly Lys  
 50 55 60

Ile Val Leu Arg Met Arg Ser Leu Lys Gly Asp Ala Asp Leu Tyr Val  
 65 70 75 80

Ser Ala Ser Ser Leu His Pro Ser Phe Asp Asp Tyr Glu Leu Gln Ser  
 85 90 95

Ala Thr Cys Gly Pro Asp Ala Val Ser Ile Pro Ala His Phe Arg Arg  
 100 105 110

Pro Val Gly Ile Gly Val Tyr Gly His Pro Ser His Leu Glu Ser Glu  
 115 120 125

Phe Glu Met Lys Val Tyr Tyr Asp Gly Thr Val Glu Gln His Pro Phe  
 130 135 140

Gly Glu Ala Ala Tyr Pro Ala Asp Gly Gln Met Pro Xaa Arg Ser Thr  
 145 150 155 160

Leu Val Pro Arg Lys Thr Pro Arg Lys Xaa Xaa Asn Leu Phe Ser Gly  
 165 170 175

Xaa Tyr

<210> 787

<211> 191

<212> PRT

<213> Homo sapiens

<400> 787

Met Ala Ala Pro Arg Gly Arg Ala Ala Pro Trp Thr Thr Ala Leu Leu  
 1 5 10 15

Leu Leu Leu Ala Ser Gln Val Leu Ser Pro Gly Ser Cys Ala Asp Glu  
 20 25 30

Glu Glu Val Pro Glu Glu Trp Val Leu Leu His Val Val Gln Gly Gln  
 35 40 45

Ile Gly Ala Gly Asn Tyr Ser Tyr Leu Arg Leu Asn His Glu Gly Lys  
 50 55 60

Ile Val Leu Arg Met Arg Ser Leu Lys Gly Asp Ala Asp Leu Tyr Val  
 65 70 75 80

Ser Ala Ser Ser Leu His Pro Ser Phe Asp Asp Tyr Glu Leu Gln Ser  
 85 90 95

Ala Thr Cys Gly Pro Asp Ala Val Ser Ile Pro Ala His Phe Arg Arg  
 100 105 110

Pro Val Gly Ile Gly Val Tyr Gly His Pro Ser His Leu Glu Ser Glu  
 115 120 125

Phe Glu Met Lys Val Tyr Tyr Asp Gly Thr Val Glu Gln His Pro Phe  
 130 135 140

Gly Glu Ala Ala Tyr Pro Ala Asp Gly Ala Asp Ala Gly Gln Lys His  
 145 150 155 160

Ala Gly Ala Pro Glu Asp Ala Ser Gln Glu Glu Glu Ser Val Leu Trp  
 165 170 175

Thr Ile Leu Ile Ser Ile Leu Lys Leu Glu Leu Glu Ile Leu Phe  
 180 185 190

<210> 788

<211> 8

<212> PRT

<213> Homo sapiens

<400> 788

Thr Ala Ile Phe Phe Leu Leu Val

1

5

&lt;210&gt; 789

&lt;211&gt; 56

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (9)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (24)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (30)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 789

Met	Arg	Phe	Trp	Phe	Leu	Val	Phe	Xaa	Phe	Phe	Phe	Phe	Pro	Glu	Ala
1				5				10						15	

His	Val	Tyr	Pro	Thr	Ser	Trp	Xaa	Val	Ser	Glu	Gln	Gly	Xaa	Ala	Thr
			20				25						30		

Ile	Ser	Val	Thr	Pro	Gly	Ile	Leu	Asn	Trp	Ile	Phe	Val	Glu	Glu	Glu
		35					40						45		

Asn	Asn	Thr	Val	Leu	Asp	Phe	Pro
	50					55	

&lt;210&gt; 790

&lt;211&gt; 279

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 790

Glu	Glu	Arg	Trp	Lys	Ser	Pro	Glu	Val	Arg	Trp	Ala	Pro	Gly	Val	Ala
1				5					10					15	

Met	Glu	Glu	Ser	Gly	Tyr	Glu	Ser	Val	Leu	Cys	Val	Lys	Pro	Asp	Val
			20					25						30	

His	Val	Tyr	Arg	Ile	Pro	Pro	Arg	Ala	Thr	Asn	Arg	Gly	Tyr	Arg	Ala
			35					40					45		

Ala	Glu	Trp	Gln	Leu	Asp	Gln	Pro	Ser	Trp	Ser	Gly	Arg	Leu	Arg	Ile
			50			55					60				

Thr	Ala	Lys	Gly	Gln	Met	Ala	Tyr	Ile	Lys	Leu	Glu	Asp	Arg	Thr	Ser
	65					70					75				80



Gly Glu Leu Phe Ala Gln Ala Pro Val Asp Gln Phe Pro Gly Thr Ala  
                             85                            90                            95  
 Val Glu Ser Val Thr Asp Ser Ser Arg Tyr Phe Val Ile Arg Ile Glu  
                             100                            105                            110  
 Asp Gly Asn Gly Arg Arg Ala Phe Ile Gly Ile Gly Phe Gly Asp Arg  
                             115                            120                            125  
 Gly Asp Ala Phe Asp Phe Asn Val Ala Leu Gln Asp His Phe Lys Trp  
                             130                            135                            140  
 Val Lys Gln Gln Cys Glu Phe Ala Lys Gln Ala Gln Asn Pro Asp Gln  
                             145                            150                            155                            160  
 Gly Pro Lys Leu Asp Leu Gly Phe Lys Glu Gly Gln Thr Ile Lys Leu  
                             165                            170                            175  
 Asn Ile Ala Asn Met Lys Lys Lys Glu Gly Ala Ala Gly Asn Pro Arg  
                             180                            185                            190  
 Val Arg Pro Ala Ser Thr Gly Gly Leu Ser Leu Leu Pro Pro Pro Pro  
                             195                            200                            205  
 Gly Gly Lys Thr Ser Thr Leu Ile Pro Pro Pro Gly Glu Gln Leu Ala  
                             210                            215                            220  
 Val Gly Gly Ser Leu Val Gln Pro Ala Val Ala Pro Ser Ser Gly Gly  
                             225                            230                            235                            240  
 Ala Pro Val Pro Trp Pro Gln Pro Asn Pro Ala Thr Ala Asp Ile Trp  
                             245                            250                            255  
 Gly Asp Phe Thr Lys Ser Thr Gly Ser Thr Ser Ser Gln Thr Gln Pro  
                             260                            265                            270  
 Gly Thr Gly Trp Val Gln Phe  
                             275

&lt;210&gt; 791

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 791

Arg Ser Arg Ser Lys Pro Arg Cys Asn Cys Glu Ile Val Thr Ile Phe  
           1                            5                            10                            15  
 Phe Ala Arg Phe Lys Ile Gly Pro Gly Arg His Arg Lys Arg Lys Ile  
                             20                            25                            30  
 Pro Lys Leu Cys Ser Ser Gly Ser Thr Ile Gly Arg Val Tyr Ser Leu  
                             35                            40                            45  
 Pro Gly Leu Leu Arg Arg Gly Ser Cys Leu Phe Gly Tyr Ile Thr Pro  
                             50                            55                            60  
 Asp Trp Phe Val Leu Lys Ile Asn Val Ile Met Leu Val Ser Tyr Leu

```

65              70              75              80
Met Val Ser Leu Glu His Ser Pro Leu Ile Leu Phe Glu Arg Val Gly
              85              90              95
Gly Arg Asp Cys Glu Gly Arg Glu Lys Cys
          100              105

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```
<210> 792
<211> 56
<212> PRT
<213> Homo sapiens
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```

<400> 792
Met Arg Phe Trp Phe Leu Val Phe Cys Phe Phe Phe Phe Pro Glu Ala
  1                               5                               10                               15
His Val Tyr Pro Thr Ser Trp Ser Val Ser Glu Gln Gly Cys Ala Thr
                20                               25                               30
Ile Ser Val Thr Pro Gly Ile Leu Asn Trp Ile Phe Val Glu Glu Glu
          35                               40                               45
Asn Asn Thr Val Leu Asp Phe Pro
    50                               55

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```
<210> 793
<211> 41
<212> PRT
<213> Homo sapiens.
```

```

<400> 793
Met Thr Phe Ser Pro Leu Met Cys Tyr Cys Cys Cys Trp Val Gly Trp
  1                      5                      10                      15
Ala Phe Cys Leu Phe Val Trp Trp Gln Ser Val Val Val Gly Ser Gly
      20                      25                      30
Arg Ala Tyr Ile Gly Phe Ser Ser Tyr
    35                      40

```

```
<210> 794
<211> 41
<212> PRT
<213> Homo sapiens
```

```
<400> 794
Met Thr Phe Ser Pro Leu Met Cys Tyr Cys Cys Cys Trp Val Gly Trp
  1                      5                10              15
Ala Phe Cys Leu Phe Val Trp Trp Gln Ser Val Val Val Gly Ser Gly
      .    20                    25             30
Arg Ala Tyr Ile Gly Phe Ser Ser Tyr
```

35

40

<210> 795  
<211> 41  
<212> PRT  
<213> Homo sapiens

<400> 795  
Met Thr Phe Ser Pro Leu Met Cys Tyr Cys Cys Cys Trp Val Gly Trp  
1 5 10 15  
Ala Phe Cys Leu Phe Val Trp Trp Gln Ser Val Val Val Gly Ser Gly  
20 25 30  
Arg Ala Tyr Ile Gly Phe Ser Ser Tyr  
35 40

<210> 796  
<211> 43  
<212> PRT  
<213> Homo sapiens

<400> 796  
Phe Leu Arg Phe Asp Gly Ile Ile Met Glu Ala Leu Tyr Lys Leu Asn  
1 5 10 15  
Glu Ile Gly Lys Gly Glu Leu Thr Leu Ser Ile Met His Ser Gly Leu  
20 25 30  
Lys Ile Arg Phe Gln Asn Glu Met Ser Asp Leu  
35 40

<210> 797  
<211> 12  
<212> PRT  
<213> Homo sapiens

<400> 797  
Ile Gly Val Asn Tyr Leu Leu Leu Phe Phe Ile Phe  
1 5 10

<210> 798  
<211> 19  
<212> PRT  
<213> Homo sapiens

<400> 798  
Lys Leu Gly Phe Ser Thr Ile Leu Leu Leu Ser Ile Phe Ile Met Ser  
1 5 10 15  
Glu Ala Asn

<210> 799  
<211> 19  
<212> PRT  
<213> Homo sapiens

<400> 799  
Lys Leu Gly Phe Ser Thr Ile Leu Leu Leu Ser Ile Phe Ile Met Ser  
1 5 10 15

Glu Ala Asn

<210> 800  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 800  
Leu Cys Val Cys Thr Gly Cys Pro Gly Gly Gly Pro Gln Ile Pro Phe  
1 5 10 15

Arg Trp Gln Thr Glu Arg Gly  
20

<210> 801  
<211> 29  
<212> PRT  
<213> Homo sapiens

<400> 801  
Val Cys Val Cys Val Cys Leu Ile Ala Arg Val Tyr Phe Cys Ile Tyr  
1 5 10 15

Val Cys Val Trp Leu His Gly Cys Ala Ser Val Cys Leu  
20 25

<210> 802  
<211> 6  
<212> PRT  
<213> Homo sapiens

<400> 802  
Val Leu Pro Ser Ala Ser  
1 5

<210> 803  
<211> 35  
<212> PRT  
<213> Homo sapiens

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PCT/US01/11988

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (10)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (27)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 803

Met	Arg	Ala	Ser	Gly	Val	Tyr	Val	Ser	Xaa	Cys	Ser	Phe	Val	Phe	Met
1				5					10					15	

Cys	Val	Cys	Val	Cys	Met	Leu	Asn	Ser	Arg	Xaa	Thr	Phe	Asp	Tyr	Gly
			20					25					30		

Val	Cys	Gly
		35

&lt;210&gt; 804

&lt;211&gt; 56

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 804

Met	Arg	Ala	Ser	Gly	Val	Tyr	Val	Ser	Glu	Cys	Ser	Phe	Val	Phe	Met
1				5					10					15	

Cys	Val	Cys	Val	Cys	Met	Ser	Asp	Cys	Thr	Gly	Val	Leu	Leu	Tyr	Leu
			20					25						30	

Cys	Val	Cys	Val	Val	Ala	Arg	Val	Cys	Leu	Cys	Val	Ser	Leu	Thr	Leu
			35				40						45		

Ala	Gly	Cys	Val	Cys	Lys	Ser	Val
	50					55	

&lt;210&gt; 805

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 805

Met	Ile	Arg	Ile	Gln	Phe	Leu	His	Leu	Phe	Leu	Trp	Val	Gly	Phe	Ile
1				5					10					15	

Phe	Arg	Gln	Pro	Pro	Ser	Ser	Tyr	Pro	Gln	Asp	Gly	Arg	Asp	Ser	Pro
			20					25					30		

Trp	Ser	Phe	Pro	Cys	Arg	Asp	Arg	Ser	Pro	Gly	Asn	Asn	Thr	Ser	Ile
		35				40						45			

Pro	Ser	His	Glu	Thr	Val	Leu	Asn	Phe	Ile	Leu	Thr
	50					55					60

<210> 806  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 806  
 Met Ile Arg Ile Gln Phe Leu His Leu Phe Leu Trp Val Gly Phe Ile  
           1                  5                  10                  15  
 Phe Arg Gln Pro Pro Ser Ser Tyr Pro Gln Asp Gly Arg Asp Ser Pro  
                   20                  25                  30  
 Trp Ser Phe Pro Cys Arg Asp Arg Ser Pro Gly Asn Asn Thr Ser Ile  
           35                  40                  45  
 Pro Ser His Glu Thr Val Leu Asn Phe Ile Leu Thr  
           50                  55                  60

<210> 807  
 <211> 444  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (92)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (95)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (97)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (98)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (101)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 807  
 Met Leu Gln Arg Ile Gly Leu Ile Phe Leu His Asn Ile Val Val Val  
           1                  5                  10                  15  
 Ser Asn Cys Phe Tyr Phe Gln Ala Phe Leu Asp Glu Phe Thr Asn Trp  
                   20                  25                  30

Ser Arg Ile Asn Pro Asn Lys Ala Arg Ile Pro Met Ala Gly Asp Thr  
 35 40 45  
 Gln Gly Val Val Gly Thr Val Ser Lys Pro Cys Phe Thr Ala Tyr Glu  
 50 55 60  
 Met Lys Ile Gly Ala Ile Thr Phe Gln Val Ala Thr Gly Asp Ile Ala  
 65 70 75 80  
 Thr Glu Gln Val Asp Val Ile Val Asn Ser Thr Xaa Arg Thr Xaa Asn  
 85 90 95  
 Xaa Xaa Ser Gly Xaa Ser Arg Ala Ile Leu Glu Gly Ala Gly Gln Ala  
 100 105 110  
 Val Glu Ser Glu Cys Ala Val Leu Ala Ala Gln Pro His Arg Asp Phe  
 115 120 125  
 Ile Ile Thr Pro Gly Gly Cys Leu Lys Cys Lys Ile Ile Ile His Val  
 130 135 140  
 Pro Gly Gly Lys Asp Val Arg Lys Thr Val Thr Ser Val Leu Glu Glu  
 145 150 155 160  
 Cys Glu Gln Arg Lys Tyr Thr Ser Val Ser Leu Pro Ala Ile Gly Thr  
 165 170 175  
 Gly Asn Ala Gly Lys Asn Pro Ile Thr Val Ala Asp Asn Ile Ile Asp  
 180 185 190  
 Ala Ile Val Asp Phe Ser Ser Gln His Ser Thr Pro Ser Leu Lys Thr  
 195 200 205  
 Val Lys Val Val Ile Phe Gln Pro Glu Leu Leu Asn Ile Phe Tyr Asp  
 210 215 220  
 Ser Met Lys Lys Arg Asp Leu Ser Ala Ser Leu Asn Phe Gln Ser Thr  
 225 230 235 240  
 Phe Ser Met Thr Thr Cys Asn Leu Pro Glu His Trp Thr Asp Met Asn  
 245 250 255  
 His Gln Leu Phe Cys Met Val Gln Leu Glu Pro Gly Gln Ser Glu Tyr  
 260 265 270  
 Asn Thr Ile Lys Asp Lys Phe Thr Arg Thr Cys Ser Ser Tyr Ala Ile  
 275 280 285  
 Glu Lys Ile Glu Arg Ile Gln Asn Ala Phe Leu Trp Gln Ser Tyr Gln  
 290 295 300  
 Val Lys Lys Arg Gln Met Asp Ile Lys Asn Asp His Lys Asn Asn Glu  
 305 310 315 320  
 Arg Leu Leu Phe His Gly Thr Asp Ala Asp Ser Val Pro Tyr Val Asn  
 325 330 335  
 Gln His Gly Phe Asn Arg Ser Cys Ala Gly Lys Asn Ala Val Ser Tyr  
 340 345 350

Gly Lys Gly Thr Tyr Phe Ala Val Asp Ala Ser Tyr Ser Ala Lys Asp  
           355                                  360                                  365  
 Thr Tyr Ser Lys Pro Asp Ser Asn Gly Arg Lys His Met Tyr Val Val  
           370                                  375                                  380  
 Arg Val Leu Thr Gly Val Phe Thr Lys Gly Arg Ala Gly Leu Val Thr  
 385                                  390                                  395                                  400  
 Pro Pro Pro Lys Asn Pro His Asn Pro Thr Asp Leu Phe Asp Ser Val  
                                   405                                  410                                  415  
 Thr Asn Asn Thr Arg Ser Pro Lys Leu Phe Val Val Phe Phe Asp Asn  
                                   420                                  425                                  430  
 Gln Ala Tyr Pro Glu Tyr Leu Ile Thr Phe Thr Ala  
           435                                  440

<210> 808

<211> 505

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (358)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (494)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (504)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (505)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 808

Met Phe Arg Thr Ala Val Met Met Ala Ala Ser Leu Ala Leu Thr Gly  
   1                                  5                                  10                                  15

Ala Val Val Ala His Ala Tyr Tyr Leu Lys His Gln Phe Tyr Pro Thr  
           20                                  25                                  30

Val Val Tyr Leu Thr Lys Ser Ser Pro Ser Met Ala Val Leu Tyr Ile  
           35                                  40                                  45

Gln Ala Phe Val Leu Val Phe Leu Leu Gly Lys Val Met Gly Lys Val  
           50                                  55                                  60

Phe Phe Gly Gln Leu Arg Ala Ala Glu Met Glu His Leu Leu Glu Arg  
   65                                  70                                  75                                  80



Ser Trp Tyr Ala Val Thr Glu Thr Cys Leu Ala Phe Thr Val Phe Arg  
                                     85                                    90                                    95  
 Asp Asp Phe Ser Pro Arg Phe Val Ala Leu Phe Thr Leu Leu Leu Phe  
                                     100                                    105                                    110  
 Leu Lys Cys Phe His Trp Leu Ala Glu Asp Arg Val Asp Phe Met Glu  
                                     115                                    120                                    125  
 Arg Ser Pro Asn Ile Ser Trp Leu Phe His Cys Arg Ile Val Ser Leu  
                                     130                                    135                                    140  
 Met Phe Leu Leu Gly Ile Leu Asp Phe Leu Phe Val Ser His Ala Tyr  
   145                                    150                                    155                                    160  
 His Ser Ile Leu Thr Arg Gly Ala Ser Val Gln Leu Val Phe Gly Phe  
                                     165                                    170                                    175  
 Glu Tyr Ala Ile Leu Met Thr Met Val Leu Thr Ile Phe Ile Lys Tyr  
                                     180                                    185                                    190  
 Val Leu His Ser Val Asp Leu Gln Ser Glu Asn Pro Trp Asp Asn Lys  
                                     195                                    200                                    205  
 Ala Val Tyr Met Leu Tyr Thr Glu Leu Phe Thr Gly Phe Ile Lys Val  
                                     210                                    215                                    220  
 Leu Leu Tyr Met Ala Phe Met Thr Ile Met Ile Lys Val His Thr Phe  
   225                                    230                                    235                                    240  
 Pro Leu Phe Ala Ile Arg Pro Met Tyr Leu Ala Met Arg Gln Phe Lys  
                                     245                                    250                                    255  
 Lys Ala Val Thr Asp Ala Ile Met Ser Arg Arg Ala Ile Arg Asn Met  
                                     260                                    265                                    270  
 Asn Thr Leu Tyr Pro Asp Ala Thr Pro Glu Glu Leu Gln Ala Met Asp  
                                     275                                    280                                    285  
 Asn Val Cys Ile Ile Cys Arg Glu Glu Met Val Thr Gly Ala Lys Arg  
                                     290                                    295                                    300  
 Leu Pro Cys Asn His Ile Phe His Thr Ser Cys Leu Arg Ser Trp Phe  
   305                                    310                                    315                                    320  
 Gln Arg Gln Gln Thr Cys Pro Thr Cys Arg Met Asp Val Leu Arg Ala  
                                     325                                    330                                    335  
 Ser Leu Pro Ala Gln Ser Pro Pro Pro Pro Glu Pro Ala Asp Gln Gly  
                                     340                                    345                                    350  
 Pro Pro Pro Ala Pro Xaa Pro Pro Pro Leu Leu Pro Gln Pro Pro Asn  
                                     355                                    360                                    365  
 Phe Pro Gln Gly Leu Leu Pro Pro Phe Pro Pro Gly Met Phe Pro Leu  
   370                                    375                                    380  
 Trp Pro Pro Met Gly Pro Phe Pro Pro Val Pro Pro Pro Pro Ser Ser  
   385                                    390                                    395                                    400

Gly Glu Ala Val Ala Pro Pro Ser Thr Ser Ala Ala Ala Leu Ser Arg  
                             405                            410                            415  
 Pro Ser Gly Ala Ala Thr Thr Thr Ala Ala Gly Thr Ser Ala Thr Ala  
                             420                            425                            430  
 Ala Ser Ala Thr Ala Ser Gly Pro Gly Ser Gly Ser Ala Pro Glu Ala  
                             435                            440                            445  
 Gly Pro Ala Pro Gly Phe Pro Phe Pro Pro Pro Trp Met Gly Met Pro  
                             450                            455                            460  
 Leu Pro Pro Pro Phe Ala Phe Pro Pro Met Pro Val Pro Pro Ala Gly  
                             465                            470                            475                            480  
 Phe Ala Gly Leu Thr Pro Glu Glu Tyr Glu Leu Trp Arg Xaa Met Ser  
                             485                            490                            495  
 Gly Arg Thr Gly Gly Pro Val Xaa Xaa  
                             500                            505

<210> 809  
 <211> 191  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (18)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (21)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 809  
 Met Phe Arg Thr Ala Val Met Met Ala Ala Ser Ile Trp Pro Arg Leu  
   1                            5                            10                            15  
 Trp Xaa Cys Pro Xaa Gly Trp Pro Cys Pro Trp Phe Pro Leu Pro Ser  
                             20                            25                            30  
 Ser Leu Asp Gly Tyr Ala Pro Ala Ser Thr Leu Cys Leu Pro Pro Asn  
                             35                            40                            45  
 Ala Cys Ala Pro Cys Gly Phe Ala Gly Leu Thr Pro Glu Glu Leu Arg  
                             50                            55                            60  
 Ala Leu Glu Gly His Glu Arg Gln His Leu Glu Ala Arg Leu Gln Ser  
                             65                            70                            75                            80  
 Leu Arg Asn Ile His Thr Leu Leu Asp Ala Ala Met Leu Gln Ile Asn  
                             85                            90                            95  
 Gln Tyr Leu Thr Val Leu Ala Ser Leu Gly Pro Pro Arg Pro Ala Thr  
                             100                            105                            110

Ser Val Asn Ser Thr Glu Glu Thr Ala Thr Thr Val Val Ala Ala Ala  
 115 120 125

Ser Ser Thr Ser Ile Pro Ser Ser Glu Ala Thr Thr Pro Thr Pro Gly  
 130 135 140

Ala Ser Pro Pro Ala Pro Glu Met Glu Arg Pro Pro Ala Pro Glu Ser  
 145 150 155 160

Val Gly Thr Glu Glu Met Pro Glu Asp Gly Glu Pro Asp Ala Ala Glu  
 165 170 175

Leu Arg Arg Arg Arg Leu Gln Lys Leu Glu Ser Pro Val Ala His  
 180 185 190

&lt;210&gt; 810

&lt;211&gt; 617

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 810

Met Phe Arg Thr Ala Val Met Met Ala Ala Ser Leu Ala Leu Thr Gly  
 1 5 10 15

Ala Val Val Ala His Ala Tyr Tyr Leu Lys His Gln Phe Tyr Pro Thr  
 20 25 30

Val Val Tyr Leu Thr Lys Ser Ser Pro Ser Met Ala Val Leu Tyr Ile  
 35 40 45

Gln Ala Phe Val Leu Val Phe Leu Leu Gly Lys Val Met Gly Lys Val  
 50 55 60

Phe Phe Gly Gln Leu Arg Ala Ala Glu Met Glu His Leu Leu Glu Arg  
 65 70 75 80

Ser Trp Tyr Ala Val Thr Glu Thr Cys Leu Ala Phe Thr Val Phe Arg  
 85 90 95

Asp Asp Phe Ser Pro Arg Phe Val Ala Leu Phe Thr Leu Leu Leu Phe  
 100 105 110

Leu Lys Cys Phe His Trp Leu Ala Glu Asp Arg Val Asp Phe Met Glu  
 115 120 125

Arg Ser Pro Asn Ile Ser Trp Leu Phe His Cys Arg Ile Val Ser Leu  
 130 135 140

Met Phe Leu Leu Gly Ile Leu Asp Phe Leu Phe Val Ser His Ala Tyr  
 145 150 155 160

His Ser Ile Leu Thr Arg Gly Ala Ser Val Gln Leu Val Phe Gly Phe  
 165 170 175

Glu Tyr Ala Ile Leu Met Thr Met Val Leu Thr Ile Phe Ile Lys Tyr  
 180 185 190

Val Leu His Ser Val Asp Leu Gln Ser Glu Asn Pro Trp Asp Asn Lys  
 195 200 205  
 Ala Val Tyr Met Leu Tyr Thr Glu Leu Phe Thr Gly Phe Ile Lys Val  
 210 215 220  
 Leu Leu Tyr Met Ala Phe Met Thr Ile Met Ile Lys Val His Thr Phe  
 225 230 235 240  
 Pro Leu Phe Ala Ile Arg Pro Met Tyr Leu Ala Met Arg Gln Phe Lys  
 245 250 255  
 Lys Ala Val Thr Asp Ala Ile Met Ser Arg Arg Ala Ile Arg Asn Met  
 260 265 270  
 Asn Thr Leu Tyr Pro Asp Ala Thr Pro Glu Glu Leu Gln Ala Met Asp  
 275 280 285  
 Asn Val Cys Ile Ile Cys Arg Glu Glu Met Val Thr Gly Ala Lys Arg  
 290 295 300  
 Leu Pro Cys Asn His Ile Phe His Thr Ser Cys Leu Arg Ser Trp Phe  
 305 310 315 320  
 Gln Arg Gln Gln Thr Cys Pro Thr Cys Arg Met Asp Val Leu Arg Ala  
 325 330 335  
 Ser Leu Pro Ala Gln Ser Pro Pro Pro Glu Pro Ala Asp Gln Gly  
 340 345 350  
 Pro Pro Pro Ala Pro His Pro Pro Pro Leu Leu Pro Gln Pro Pro Asn  
 355 360 365  
 Phe Pro Gln Gly Leu Leu Pro Pro Phe Pro Pro Gly Met Phe Pro Leu  
 370 375 380  
 Trp Pro Pro Met Gly Pro Phe Pro Pro Val Pro Pro Pro Pro Ser Ser  
 385 390 395 400  
 Gly Glu Ala Val Ala Pro Pro Ser Thr Ser Ala Ala Ala Leu Ser Arg  
 405 410 415  
 Pro Ser Gly Ala Ala Thr Thr Thr Ala Ala Gly Thr Ser Ala Thr Ala  
 420 425 430  
 Ala Ser Ala Thr Ala Ser Gly Pro Gly Ser Gly Ser Ala Pro Glu Ala  
 435 440 445  
 Gly Pro Ala Pro Gly Phe Pro Phe Pro Pro Pro Trp Met Gly Met Pro  
 450 455 460  
 Leu Pro Pro Pro Phe Ala Phe Pro Pro Met Pro Val Pro Pro Ala Gly  
 465 470 475 480  
 Phe Ala Gly Leu Thr Pro Glu Glu Leu Arg Ala Leu Glu Gly His Glu  
 485 490 495  
 Arg Gln His Leu Glu Ala Arg Leu Gln Ser Leu Arg Asn Ile His Thr  
 500 505 510

Leu Leu Asp Ala Ala Met Leu Gln Ile Asn Gln Tyr Leu Thr Val Leu  
 515 520 525

Ala Ser Leu Gly Pro Pro Arg Pro Ala Thr Ser Val Asn Ser Thr Glu  
 530 535 540

Glu Thr Ala Thr Thr Val Val Ala Ala Ala Ser Ser Thr Ser Ile Pro  
 545 550 555 560

Ser Ser Glu Ala Thr Thr Pro Thr Pro Gly Ala Ser Pro Pro Ala Pro  
 565 570 575

Glu Met Glu Arg Pro Pro Ala Pro Glu Ser Val Gly Thr Glu Glu Met  
 580 585 590

Pro Glu Asp Gly Glu Pro Asp Ala Ala Glu Leu Arg Arg Arg Arg Leu  
 595 600 605

Gln Lys Leu Glu Ser Pro Val Ala His  
 610 615

<210> 811  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 811  
 Met Asn Val Arg Leu Val Leu Asn Pro Phe Pro Leu Tyr Ser Val Tyr  
 1 5 10 15

Val Ile Pro Asn  
 20

<210> 812  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 812  
 Leu Glu Ile Leu Val Val Lys Lys Leu Leu Ala  
 1 5 10

<210> 813  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 813  
 Met Asn Val Arg Leu Val Leu Asn Pro Phe Pro Leu Tyr Ser Val Tyr  
 1 5 10 15

Val Ile Pro Asn  
 20

<210> 814  
 <211> 62  
 <212> PRT  
 <213> Homo sapiens

<400> 814  
 Met Leu Cys Pro Ala Leu Gly Pro Phe Leu Leu Phe Leu Leu Ser Ser  
   1                  5                  10                  15  
 Thr Leu Met Ala Ser Phe Met Gly Asp Thr Pro Cys His Pro Gly Glu  
           20                  25                  30  
 Leu Ser Ala Phe Gly Val Ala Pro Ser Arg Val Phe Thr Ser Ser Phe  
           35                  40                  45  
 Leu Phe Thr Val Phe Thr Pro Ser Tyr Pro Ser Leu Pro Gly  
       50                  55                  60

<210> 815  
 <211> 62  
 <212> PRT  
 <213> Homo sapiens

<400> 815  
 Met Leu Cys Pro Ala Leu Gly Pro Phe Leu Leu Phe Leu Leu Ser Ser  
   1                  5                  10                  15  
 Thr Leu Met Ala Ser Phe Met Gly Asp Thr Pro Cys His Pro Gly Glu  
           20                  25                  30  
 Leu Ser Ala Phe Gly Val Ala Pro Ser Arg Val Phe Thr Ser Ser Phe  
           35                  40                  45  
 Leu Phe Thr Val Phe Thr Pro Ser Tyr Pro Ser Leu Pro Gly  
       50                  55                  60

<210> 816  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 816  
 Gln Ala Ser Trp Val Trp Trp Leu Thr Thr Val Ile Pro Ala Leu Trp  
   1                  5                  10                  15  
 Glu Ala Arg Ala Gly Gly Ser Leu Glu Pro Arg Ser Ser Arg Leu Ala  
           20                  25                  30  
 Trp Ala Thr Gln Lys Val Phe Ile Ser Lys Lys Lys Lys Lys Lys Lys  
       35                  40                  45  
 Arg Ala Ala  
       50

<210> 817  
 <211> 19  
 <212> PRT  
 <213> Homo sapiens

<400> 817  
 Leu Val Cys Phe Val Ile Phe Arg Leu Trp Tyr Met Cys Val Phe Thr  
           1                  5                  10                  15

Leu Trp Ala

<210> 818  
 <211> 4  
 <212> PRT  
 <213> Homo sapiens

<400> 818  
 Phe Leu Ser Ser  
           1

<210> 819  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<400> 819  
 Met Phe Ile Ser Leu Phe Ile Phe Gly Leu Val Arg Leu Trp Pro Cys  
           1                  5                  10                  15

Cys Val Val Ile Tyr Phe Val Tyr Ser Ile Cys Lys His Gln Cys Ser  
                   20                  25                  30

Gln Glu Ala His Ser Ser Ile Phe Asn Cys Lys Phe Val Ser Gln Ser  
           35                  40                  45

Gln Phe Ser Ile Met  
           50

<210> 820  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<400> 820  
 Met Phe Ile Ser Leu Phe Ile Phe Gly Leu Val Arg Leu Trp Pro Cys  
           1                  5                  10                  15

Cys Val Val Ile Tyr Phe Val Tyr Ser Ile Cys Lys His Gln Cys Ser  
                   20                  25                  30

Gln Glu Ala His Ser Ser Ile Phe Asn Cys Lys Phe Val Ser Gln Ser

35 40 45  
 Gln Phe Ser Ile Met  
 50  
  
 <210> 821  
 <211> 283  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 821  
 Met Ile Phe Leu Leu Leu Met Leu Ser Leu Glu Leu Gln Leu His Gln  
 1 5 10 15  
 Ile Ala Ala Leu Phe Thr Val Thr Val Pro Lys Glu Leu Tyr Ile Ile  
 20 25 30  
 Glu His Gly Ser Asn Val Thr Leu Glu Cys Asn Phe Asp Thr Gly Ser  
 35 40 45  
 His Val Asn Leu Gly Ala Ile Thr Ala Ser Leu Gln Lys Val Glu Asn  
 50 55 60  
 Asp Thr Ser Pro His Arg Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu  
 65 70 75 80  
 Pro Leu Gly Lys Ala Ser Phe His Ile Pro Gln Val Gln Val Arg Asp  
 85 90 95  
 Glu Gly Gln Tyr Gln Cys Ile Ile Ile Tyr Gly Val Ala Trp Asp Tyr  
 100 105 110  
 Lys Tyr Leu Thr Leu Lys Val Lys Ala Ser Tyr Arg Lys Ile Asn Thr  
 115 120 125  
 His Ile Leu Lys Val Pro Glu Thr Asp Glu Val Glu Leu Thr Cys Gln  
 130 135 140  
 Ala Thr Gly Tyr Pro Leu Ala Glu Val Ser Trp Pro Asn Val Ser Val  
 145 150 155 160  
 Pro Ala Asn Thr Ser His Ser Arg Thr Pro Glu Gly Leu Tyr Gln Val  
 165 170 175  
 Thr Ser Val Leu Arg Leu Lys Pro Pro Pro Gly Arg Asn Phe Ser Cys  
 180 185 190  
 Val Phe Trp Asn Thr His Val Arg Glu Leu Thr Leu Ala Ser Ile Asp  
 195 200 205  
 Leu Gln Ser Gln Met Glu Pro Arg Thr His Pro Thr Trp Leu Leu His  
 210 215 220  
 Ile Phe Ile Pro Ser Cys Ile Ile Ala Phe Ile Phe Ile Ala Thr Val  
 225 230 235 240  
 Ile Ala Leu Arg Lys Gln Leu Cys Gln Lys Leu Tyr Ser Ser Lys Asp  
 245 250 255



Thr Thr Lys Arg Pro Val Thr Thr Thr Lys Arg Glu Val Asn Ser Ala  
                   260                                  265                                  270

Val Asn Leu Asn Leu Trp Ser Trp Glu Pro Gly  
                   275                                  280

<210> 822

<211> 93

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (89)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (92)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 822

Met Ile Phe Leu Leu Leu Met Leu Ser Leu Glu Leu Gln Leu His Gln  
       1                                  5                                  10                                  15

Ile Ala Ala Leu Phe Thr Val Thr Val Pro Lys Glu Leu Tyr Ile Ile  
                   20                                  25                                  30

Glu His Gly Ser Asn Val Thr Leu Glu Cys Asn Phe Asp Thr Gly Ser  
                   35                                  40                                  45

His Val Asn Leu Gly Ala Ile Thr Ala Ser Leu Gln Lys Val Glu Asn  
       50                                  55                                  60

Asp Thr Ser Pro His Arg Glu Arg Ala Thr Leu Leu Glu Glu Gln Leu  
       65                                  70                                  75                                  80

Pro Leu Gly Lys Ala Ser Phe Pro Xaa Leu Lys Xaa Lys  
                                   85                                  90

<210> 823

<211> 23

<212> PRT

<213> Homo sapiens

<400> 823

Leu Phe Leu Leu Leu Glu Ile Ser Thr His Leu Cys Phe Trp Lys Ser  
       1                                  5                                  10                                  15

Leu Arg Lys Leu Glu Gly Lys  
                   20

<210> 824

<211> 46  
 <212> PRT  
 <213> Homo sapiens

<400> 824

Met Pro Trp Leu Lys Ser Leu Leu His Phe Ser Leu Phe Leu Val Val  
 1 5 10 15  
 Phe Ser Thr Leu Ala Val Lys Ser Leu Gly Val Pro Val Ala Ala Gly  
 20 25 30  
 Ser Pro Phe Cys Ile Val Asp Val Leu His Phe Ile Leu Leu  
 35 40 45

<210> 825

<211> 46  
 <212> PRT  
 <213> Homo sapiens

<400> 825

Met Pro Trp Leu Lys Ser Leu Leu His Phe Ser Leu Phe Leu Val Val  
 1 5 10 15  
 Phe Ser Thr Leu Ala Val Lys Ser Leu Gly Val Pro Val Ala Ala Gly  
 20 25 30  
 Ser Pro Phe Cys Ile Val Asp Val Leu His Phe Ile Leu Leu  
 35 40 45

<210> 826

<211> 67  
 <212> PRT  
 <213> Homo sapiens

<400> 826

Met Asp Arg Gly Val Met Cys Leu Leu Ala Ser Trp Pro Gly Leu Gly  
 1 5 10 15  
 Ala Gln Phe Cys Gly Ala Gly Val Cys Pro Leu Arg Val Pro Ser Leu  
 20 25 30  
 Glu Pro Thr Leu Pro Asn Asp Gly Gly Gly Leu Glu Ala Leu Thr Leu  
 35 40 45  
 Gly Gly Lys Glu Ala Lys Glu Arg Trp Arg Trp Lys Gly Arg Pro Gly  
 50 55 60  
 Gln Gly Gly  
 65

<210> 827

<211> 83  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 827

Gly His Val Leu Ala Tyr Ser Ser Trp Pro Ser Leu Ala Pro Gly Leu  
 1 5 10 15

Ser Val Gln Tyr Phe Val Ser Arg Val Glu Val Pro Asn Pro Gly Cys  
 20 25 30

Thr Leu Glu Ala Pro Gly Lys Leu Ser Glu Phe Leu Arg Pro Glu Pro  
 35 40 45

His Pro Lys Pro Ile Ser Ser Glu Ser Leu Gly Gly Thr Glu Pro Gly  
 50 55 60

Phe Cys Gln Leu Lys Pro Ala Met Val Thr Ser Val Ser Ser Tyr Thr  
 65 70 75 80

Glu Asn Ser

&lt;210&gt; 828

&lt;211&gt; 67

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 828

Met Asp Arg Gly Val Met Cys Leu Leu Ala Ser Trp Pro Gly Leu Gly  
 1 5 10 15

Ala Gln Phe Cys Gly Ala Gly Val Cys Pro Leu Arg Val Pro Ser Leu  
 20 25 30

Glu Pro Thr Leu Pro Asn Asp Gly Gly Gly Leu Glu Ala Leu Thr Leu  
 35 40 45

Gly Gly Lys Glu Ala Lys Glu Arg Trp Arg Trp Lys Gly Arg Pro Gly  
 50 55 60

Gln Gly Gly  
 65

&lt;210&gt; 829

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 829

Gly His Val Leu Ala Tyr Ser Ser Trp Pro Ser Leu Ala Pro Gly Leu  
 1 5 10 15

Ser Val Gln Tyr Phe Val Ser Arg Val Glu Val Pro Asn Pro Gly Cys  
 20 25 30

Thr Leu Glu Ala Pro Gly Lys Leu Ser Glu Phe Leu Arg Pro Glu Pro  
 35 40 45

His Pro Lys Pro Ile Ser Ser Glu Ser Leu Gly Gly Thr Glu Pro Gly  
 50 55 60

Phe Cys Gln Leu Lys Pro Ala Met Val Thr Ser Val Ser Ser Tyr Thr  
 65 70 75 80

Glu Asn Ser

<210> 830

<211> 66

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (9)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 830

Ser Trp Val Asp Phe Asp Cys Val Xaa Glu Val Ser Tyr Leu Asn Ser  
 1 5 10 15

Gly Ser Tyr Ser Leu Val Leu His Leu Glu Gly Leu His Pro Leu Glu  
 20 25 30

Leu Ser Gly Lys Leu Ala Ile Asp Phe Gly Lys Lys Arg Glu Phe Cys  
 35 40 45

Val Asp Gly Val Gly Gly Ala Thr Leu Val Ile Cys Pro Gly Phe Gln  
 50 55 60

Asp Phe  
 65

<210> 831

<211> 61

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (13)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 831

Met Trp Tyr Val Cys Ala Cys Val Cys Val Cys Val Xaa Val Cys Ser  
 1 5 10 15

Tyr Asn Arg Arg Thr Gly Lys Val Arg Thr Gln Asn Asn Glu Asp Leu  
 20 25 30

Leu Lys Cys Gly Gly Gly Val Cys Val Cys Val Phe Ile Glu Gln Glu  
 35 40 45

Asp Arg Lys Gly Asn Asp His Pro Trp Lys Met Lys Gly

50

55

60

<210> 832  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 832  
 Val Cys Cys Cys Leu His Leu Asn Ala Phe Val  
 1 5 10

<210> 833  
 <211> 716  
 <212> PRT  
 <213> Homo sapiens

<400> 833  
 Met Asn Asn Phe Arg Ala Thr Ile Leu Phe Trp Ala Ala Ala Ala Trp  
 1 5 10 15  
 Ala Lys Ser Gly Lys Pro Ser Gly Glu Met Asp Glu Val Gly Val Gln  
 20 25 30  
 Lys Cys Lys Asn Ala Leu Lys Leu Pro Val Leu Glu Val Leu Pro Gly  
 35 40 45  
 Gly Gly Trp Asp Asn Leu Arg Asn Val Asp Met Gly Arg Val Met Glu  
 50 55 60  
 Leu Thr Tyr Ser Asn Cys Arg Thr Thr Glu Asp Gly Gln Tyr Ile Ile  
 65 70 75 80  
 Pro Asp Glu Ile Phe Thr Ile Pro Gln Lys Gln Ser Asn Leu Glu Met  
 85 90 95  
 Asn Ser Glu Ile Leu Glu Ser Trp Ala Asn Tyr Gln Ser Ser Thr Ser  
 100 105 110  
 Tyr Ser Ile Asn Thr Glu Leu Ser Leu Phe Ser Lys Val Asn Gly Lys  
 115 120 125  
 Phe Ser Thr Glu Phe Gln Arg Met Lys Thr Leu Gln Val Lys Asp Gln  
 130 135 140  
 Ala Ile Thr Thr Arg Val Gln Val Arg Asn Leu Val Tyr Thr Val Lys  
 145 150 155 160  
 Ile Asn Pro Thr Leu Glu Leu Ser Ser Gly Phe Arg Lys Glu Leu Leu  
 165 170 175  
 Asp Ile Ser Asp Arg Leu Glu Asn Asn Gln Thr Arg Met Ala Thr Tyr  
 180 185 190  
 Leu Ala Glu Leu Leu Val Leu Asn Tyr Gly Thr His Val Thr Thr Ser  
 195 200 205

Val	Asp	Ala	Gly	Ala	Ala	Leu	Ile	Gln	Glu	Asp	His	Leu	Arg	Ala	Ser		
210						215					220						
Phe	Leu	Gln	Asp	Ser	Gln	Ser	Ser	Arg	Ser	Ala	Val	Thr	Ala	Ser	Ala		
225					230					235					240		
Gly	Leu	Ala	Phe	Gln	Asn	Thr	Val	Asn	Phe	Lys	Phe	Glu	Glu	Asn	Tyr		
				245					250					255			
Thr	Ser	Gln	Asn	Val	Leu	Thr	Lys	Ser	Tyr	Leu	Ser	Asn	Arg	Thr	Asn		
			260					265					270				
Ser	Arg	Val	Gln	Ser	Ile	Gly	Gly	Val	Pro	Phe	Tyr	Pro	Gly	Ile	Thr		
	275					280						285					
Leu	Gln	Ala	Trp	Gln	Gln	Gly	Ile	Thr	Asn	His	Leu	Val	Ala	Ile	Asp		
290						295					300						
Arg	Ser	Gly	Leu	Pro	Leu	His	Phe	Phe	Ile	Asn	Pro	Asn	Met	Leu	Pro		
305					310					315					320		
Asp	Leu	Pro	Gly	Pro	Leu	Val	Lys	Lys	Val	Ser	Lys	Thr	Val	Glu	Thr		
				325					330					335			
Ala	Val	Lys	Arg	Tyr	Tyr	Thr	Phe	Asn	Thr	Tyr	Pro	Gly	Cys	Thr	Asp		
			340					345					350				
Leu	Asn	Ser	Pro	Asn	Phe	Asn	Phe	Gln	Ala	Asn	Thr	Asp	Asp	Gly	Ser		
		355					360					365					
Cys	Glu	Gly	Lys	Met	Thr	Asn	Phe	Ser	Phe	Gly	Gly	Val	Tyr	Gln	Glu		
370						375					380						
Cys	Thr	Gln	Leu	Ser	Gly	Asn	Arg	Asp	Val	Leu	Leu	Cys	Gln	Lys	Leu		
385					390					395					400		
Glu	Gln	Lys	Asn	Pro	Leu	Thr	Gly	Asp	Phe	Ser	Cys	Pro	Ser	Gly	Tyr		
			405					410						415			
Ser	Pro	Val	His	Leu	Leu	Ser	Gln	Ile	His	Glu	Glu	Gly	Tyr	Asn	His		
			420					425					430				
Leu	Glu	Cys	His	Arg	Lys	Cys	Thr	Leu	Leu	Val	Phe	Cys	Lys	Thr	Val		
		435					440					445					
Cys	Glu	Asp	Val	Phe	Gln	Val	Ala	Lys	Ala	Glu	Phe	Arg	Ala	Phe	Trp		
450						455					460						
Cys	Val	Ala	Ser	Ser	Gln	Val	Pro	Glu	Asn	Ser	Gly	Leu	Leu	Phe	Gly		
465					470					475					480		
Gly	Leu	Phe	Ser	Ser	Lys	Ser	Ile	Asn	Pro	Met	Thr	Asn	Ala	Gln	Ser		
				485					490					495			
Cys	Pro	Ala	Gly	Tyr	Phe	Pro	Leu	Arg	Leu	Phe	Glu	Asn	Leu	Lys	Val		
			500					505					510				
Cys	Val	Ser	Gln	Asp	Tyr	Glu	Leu	Gly	Ser	Arg	Phe	Ala	Val	Pro	Phe		
	515						520					525					

Gly Gly Phe Phe Ser Cys Thr Val Gly Asn Pro Leu Val Asp Pro Ala  
 530 535 540  
 Ile Ser Arg Asp Leu Gly Ala Pro Ser Leu Lys Lys Cys Pro Gly Gly  
 545 550 555 560  
 Phe Ser Gln His Pro Ala Leu Ile Ser Asp Gly Cys Gln Val Ser Tyr  
 565 570 575  
 Cys Val Lys Ser Gly Leu Phe Thr Gly Gly Ser Leu Pro Pro Ala Arg  
 580 585 590  
 Leu Pro Pro Phe Thr Arg Pro Pro Leu Met Ser Gln Ala Ala Thr Asn  
 595 600 605  
 Thr Val Ile Val Thr Asn Ser Glu Asn Ala Arg Ser Trp Ile Lys Asp  
 610 615 620  
 Ser Gln Thr His Gln Trp Arg Leu Gly Glu Pro Ile Glu Leu Arg Arg  
 625 630 635 640  
 Ala Met Asn Val Ile His Gly Asp Gly Gly Gly Leu Ser Gly Gly Ala  
 645 650 655  
 Ala Ala Gly Val Thr Val Gly Val Thr Thr Ile Leu Ala Val Val Ile  
 660 665 670  
 Thr Leu Ala Ile Tyr Gly Thr Arg Lys Phe Lys Lys Lys Ala Tyr Gln  
 675 680 685  
 Ala Ile Glu Glu Arg Gln Ser Leu Val Pro Gly Thr Ala Ala Thr Gly  
 690 695 700  
 Asp Thr Thr Tyr Gln Glu Gln Gly Gln Ser Pro Ala  
 705 710 715

&lt;210&gt; 834

&lt;211&gt; 94

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 834

Leu Ala Val Ile Met Ala Arg Pro Ala Ala Glu Pro Leu Cys Phe Leu  
 1 5 10 15  
 Asn Pro Lys Leu Leu Ala Leu Ala Val Gly Val Leu Glu Leu Leu Gly  
 20 25 30  
 Arg Gly Phe Leu Asp Ser Ser Pro Leu Leu Arg Pro Ala Ser Asp Gly  
 35 40 45  
 Glu Arg Phe Thr Trp Glu Ala Leu Gly Glu Ser Leu Pro Phe Ser Asp  
 50 55 60  
 Thr Phe Ala Ser Ser Val Phe Pro Val Pro Gly Val Phe Ser Ala Pro  
 65 70 75 80  
 Ala Gly Ala Glu Ala Phe Val Leu Gly Met Val Met Pro Thr

85

90

<210> 835  
<211> 39  
<212> PRT  
<213> Homo sapiens

<400> 835  
Met His Leu Leu Pro Trp Arg Ala Ala Ala Ala Pro Pro Leu Leu Ile  
1 5 10 15  
Ala Val Pro Pro Arg Pro Ser Arg Ser Pro Val Gln Pro Pro Ser Leu  
20 25 30  
Gly Ala Ala Asn Pro Ser Ala  
35

<210> 836  
<211> 9  
<212> PRT  
<213> Homo sapiens

<400> 836  
Pro Ser Ala Ala Ala Ser Ala Thr Pro  
1 5

<210> 837  
<211> 63  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (12)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (16)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (20)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (23)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (25)



<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (35)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (38)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (48)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (49)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 837

Met His Leu Leu Pro Trp Arg Ala Ala Ala Xaa Pro Leu Leu Xaa  
1 5 10 15

Ala Val Pro Xaa Arg Ala Xaa Arg Xaa Pro Val Gln Ala Pro Ser Leu  
20 25 30

Gly Ala Xaa Asn Pro Xaa Arg Gly Thr Gln Val Ala Thr Val Ser Xaa  
35 40 45

Xaa Ser Gly Lys Leu Leu Gly Leu Lys Ala Pro Arg Pro Lys Pro  
50 55 60

<210> 838

<211> 84

<212> PRT

<213> Homo sapiens

<400> 838

Thr Tyr Ser Phe Cys Val Cys Glu Arg Ala Phe Val Phe Gly Ser Val  
1 5 10 15

Pro Arg Ala Glu Val Glu Gln Gly Cys Thr Tyr His Gly Lys Gly Gly  
20 25 30

Arg Lys Glu Asn Trp Ile Ala Cys Asp Leu Trp Trp Asn Leu Phe Leu  
35 40 45

Leu Pro Arg Pro Phe Arg Pro Cys Leu Ile Ser Val Gly His Phe Arg  
50 55 60

Leu Trp Gln Gly Arg Ala Gly Leu Gln Ser Glu Val Pro Ala Ser Ser  
65 70 75 80

Leu Glu His Asn

<210> 839  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens  
  
 <220>  
 <221> SITE  
 <222> (8)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (9)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (10)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (16)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 839  
 Leu Gly Gly Tyr Ala Leu Ser Xaa Xaa Xaa Asn Arg Val Thr Asp Xaa  
   1                  5                  10                  15  
 Val Met Ile Tyr Phe Phe Ile Ile Ile Val Glu Tyr Phe Tyr Gly Lys  
                   20                  25                  30  
 Ile Phe Val Val Leu Ile Ile Pro Ile Lys Ile Met Pro Asn Thr Lys  
                   35                  40                  45  
 Tyr Glu Phe Tyr Asp Val His Phe Val Leu Gly Ile Lys Arg Lys Lys  
                   50                  55                  60  
 His Thr Ser Trp Lys Ser Val Ser Cys Phe Leu Leu Leu  
   65                  70                  75

<210> 840  
 <211> 184  
 <212> PRT  
 <213> Homo sapiens

<400> 840  
 Met Ser Arg Thr Ala Tyr Thr Val Gly Ala Leu Leu Leu Leu Leu Gly  
   1                  5                  10                  15  
 Thr Leu Leu Pro Ala Ala Glu Gly Lys Lys Lys Gly Ser Gln Gly Ala  
                   20                  25                  30  
 Ile Pro Pro Pro Asp Lys Ala Gln His Asn Asp Ser Glu Gln Thr Gln  
                   35                  40                  45

Ser Pro Gln Gln Pro Gly Ser Arg Asn Arg Gly Arg Gly Gln Gly Arg  
 50 55 60  
 Gly Thr Ala Met Pro Gly Glu Glu Val Leu Glu Ser Ser Gln Glu Ala  
 65 70 75 80  
 Leu His Val Thr Glu Arg Lys Tyr Leu Lys Arg Asp Trp Cys Lys Thr  
 85 90 95  
 Gln Pro Leu Lys Gln Thr Ile His Glu Glu Gly Cys Asn Ser Arg Thr  
 100 105 110  
 Ile Ile Asn Arg Phe Cys Tyr Gly Gln Cys Asn Ser Phe Tyr Ile Pro  
 115 120 125  
 Arg His Ile Arg Lys Glu Glu Gly Ser Phe Gln Ser Cys Ser Phe Cys  
 130 135 140  
 Lys Pro Lys Lys Phe Thr Thr Met Met Val Thr Leu Asn Cys Pro Glu  
 145 150 155 160  
 Leu Gln Pro Pro Thr Lys Lys Lys Arg Val Thr Arg Val Lys Gln Cys  
 165 170 175  
 Arg Cys Ile Ser Ile Asp Leu Asp  
 180

&lt;210&gt; 841

&lt;211&gt; 87

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (1)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (26)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 841

Xaa His Ser His Trp Glu Gly Leu Lys Leu Cys Cys Leu Asn Pro Val  
 1 5 10 15

Leu Gly Pro Ala Arg Lys Arg Lys Arg Xaa Leu Arg Asn Arg Gly Ala  
 20 25 30

Arg Gly Gly Cys Arg Cys His Ser Arg Ala Ala Leu His Pro His Pro  
 35 40 45

His Ala Ser Cys Phe Thr Ala His Ser Val Thr Glu Leu Val Ala Leu  
 50 55 60

Gly Thr Gly Gly His Pro His Thr Leu Met Pro Thr Ala Glu Gly Arg  
 65 70 75 80

Ala Thr His Pro Ser Arg Asp  
85

<210> 842  
<211> 77  
<212> PRT  
<213> Homo sapiens

<400> 842  
Phe Val Leu Leu His Cys Leu Asn Ser His Leu His Leu Ala Leu Gln  
1 5 10 15  
Phe Pro Leu Asn Thr Leu Ser Ser Pro Leu Val Cys Cys Gln Ser Ala  
20 25 30  
Ala Leu Pro Ile Lys Ala Cys Ile Asn Tyr Ile Cys Pro Met Phe Thr  
35 40 45  
Phe Ile Lys His Phe Pro Cys Thr Pro Val Pro Thr Ser Gln Gln Thr  
50 55 60  
Arg Glu Arg Ala Val Gln Leu Met Ser Leu Pro Ser Phe  
65 70 75

<210> 843  
<211> 41  
<212> PRT  
<213> Homo sapiens

<400> 843  
Met Ala Phe Pro Arg Val Gly Ala Phe Leu Phe Leu Ala Ser Leu Ser  
1 5 10 15  
Ser Leu Leu His Cys Arg Leu Leu Ala Glu Ala Val Ser Gly Arg Ser  
20 25 30  
Val Ser Leu Ala Pro Ser Ile Ile Arg  
35 40

<210> 844  
<211> 164  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (3)  
<223> Xaa equals any of the naturally occurring L-amino acids  
  
<220>  
<221> SITE  
<222> (95)  
<223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 844

Arg Met Xaa Cys Ser Gln Pro Pro Arg Cys His Phe Gln Ser Asp Phe  
 1 5 10 15  
 Gln Lys Cys Ala Pro Cys Pro Arg Ala Gln Thr His Trp Leu Glu Pro  
 20 25 30  
 Pro Gly Arg Val Gln Thr Ile Ser Ser Met Arg Asn Ala Gln Lys Gly  
 35 40 45  
 Phe Ala Asp Ser Ile Arg Leu Trp Arg Leu Pro Ala Ser Gly Val Gly  
 50 55 60  
 Trp Val Val Ser Pro Pro Ile Gln Thr Gln Glu Val Ala Pro Glu Gly  
 65 70 75 80  
 Met Tyr Leu Val Gly Ser Ser Ser Gly Thr Leu Gly Gly Cys Xaa Ala  
 85 90 95  
 Leu Thr Gln Tyr Phe Ser Leu Ser Pro Leu Trp Gly Ala Cys Val Arg  
 100 105 110  
 Ala Arg Val Leu Ala Tyr Ala Phe Leu Cys Gly His Ile Arg Met Pro  
 115 120 125  
 Leu Gly Glu His Val His Val Ser Pro Pro Glu Arg Ala Cys Val Cys  
 130 135 140  
 Ala Pro Leu Arg Pro Arg Phe Gly Arg Leu Gly Phe Gly Val Pro Val  
 145 150 155 160  
 Phe Cys Pro Pro

&lt;210&gt; 845

&lt;211&gt; 80

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (25)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 845

Met Gly Thr Ser Thr Ala Trp Arg Val Pro Trp Arg Arg Trp Ala Arg  
 1 5 10 15  
 Val Arg Cys Trp Trp Leu Trp Pro Xaa Thr Gly Thr Ala Glu Pro Pro  
 20 25 30  
 Gly Thr Ala Gly Trp Gln Gly Leu Ala Gly Gly Arg Cys Arg Glu Ala  
 35 40 45  
 Trp Gly Ser Leu Leu Met Gly Met Phe Gly Leu Cys Phe Leu Pro Val  
 50 55 60

His Ser Gln Ser Cys Leu Ser Ser Ser Ser Ser Pro Thr Pro Arg Pro  
 65 70 75 80

<210> 846.

<211> 53

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (4)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (10)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (27)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 846

Ile Gly Pro Xaa Gly Pro Arg Asn Ser Xaa Thr Gly Gly Ala Phe Leu  
 1 5 10 15

Asp Phe Ser Ala Gln Ala Lys Lys Lys Lys Xaa Gln Phe Leu Lys Ile  
 20 25 30

Phe Phe Pro Gly Leu Cys Lys Ser Leu Ile Tyr Gly Ile Phe Val Met  
 35 40 45

Gln Arg Asn Thr Leu  
 50

<210> 847

<211> 50

<212> PRT

<213> Homo sapiens

<400> 847

Met Glu Glu Val Ala Phe Met Val Leu Lys Tyr Val Leu Pro Phe Leu  
 1 5 10 15

Lys Ser Leu Trp Leu His Val Tyr Leu Leu Ala Val Leu Trp Pro Arg  
 20 25 30

Leu Ala Ser Met Ile Ser Phe Gly Ser Arg Leu Phe Gln Ile Val Asp  
 35 40 45

Gly Ala  
 50

<210> 848  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (5)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (6)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 848  
 Lys Lys Xaa Pro Xaa Xaa Leu Ser Gly Ser Lys Ala Ile Ala Ser Lys  
     1                    5                    10                    15  
 Thr Lys Glu Ile Glu Gln Val Tyr Arg Gln Asp Cys Glu Thr Phe Gly  
                     20                    25                    30  
 Met Val Val Lys Met Leu Ile Glu Lys Asp Pro Ser Leu Glu Lys Ser  
             35                    40                    45  
 Ile Gln Phe Ala Leu Arg Gln Asn Leu His Glu Ile Gly Glu Arg Cys  
     50                    55                    60  
 Val Glu Glu Leu Lys His Phe Ile Ala Glu Tyr Asp Thr Ser Thr Gln  
     65                    70                    75                    80  
 Asp Phe Gly Glu Pro Phe  
                     85

<210> 849  
 <211> 129  
 <212> PRT  
 <213> Homo sapiens

<400> 849  
 Arg Lys Val Glu Gly Gly Ala Ser Gly Leu Asn Gly Phe Pro Asn His  
     1                    5                    10                    15  
 Pro Ser Ser Leu Gly Pro Ala Trp Phe Pro Pro Leu Pro Leu Pro Ser  
             20                    25                    30  
 Thr Leu Ser Arg Thr Gly Leu Met Lys Ala Leu Pro Lys Ile Ser Pro  
             35                    40                    45  
 Thr Pro Asn Phe Pro Leu Pro Pro Thr Phe Pro Thr Ser Ser Thr Thr

50                      55                      60  
 Leu Phe Gly Ala Thr Ala Gly Pro Glu Ala Gln Ser Ala Val Ser Gln  
 65                      70                      75                      80  
 Ala Phe Val His Leu Ser Pro Gln Ser Ile Ser Val Leu Gly Glu Ser  
                     85                      90                      95  
 His Thr Glu Thr Gln Glu His Pro Leu Pro Glu Leu Arg Glu Val Leu  
                     100                      105                      110  
 Ser Leu Arg Gly Gly Leu Ser Ala Val Cys Asn Asn Val Val Leu Phe  
                     115                      120                      125  
 Ile

<210> 850  
 <211> 48  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (45)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (46)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (48)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 850  
 Met Val Gln Arg Leu Trp Val Ser Arg Leu Leu Arg His Arg Lys Ala  
   1                      5                      10                      15  
 Gln Leu Leu Leu Val Asn Leu Leu Thr Phe Gly Leu Glu Val Cys Leu  
                     20                      25                      30  
 Ala Ala Gly Phe Thr Tyr Val Pro Leu Cys Cys Gly Xaa Xaa Val Xaa  
                     35                      40                      45

<210> 851  
 <211> 12  
 <212> PRT  
 <213> Homo sapiens

<400> 851



Ile Leu Gln Arg Arg Lys Gln Arg Leu Leu Arg Gly  
 1 5 10

<210> 852

<211> 371

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (20)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 852

Met Leu Phe Pro Ser Phe Ser Arg Ser Leu Val Pro Leu Pro His Ala  
 1 5 10 15

Leu Tyr Leu Xaa Gln Pro Leu Thr His Thr Thr Ser Leu Leu Ala Gly  
 20 25 30

Ile Gly Pro Val Leu Gly Leu Val Cys Val Pro Leu Leu Gly Ser Ala  
 35 40 45

Ser Asp His Trp Arg Gly Arg Tyr Gly Arg Arg Arg Pro Phe Ile Trp  
 50 55 60

Ala Leu Ser Leu Gly Ile Leu Leu Ser Leu Phe Leu Ile Pro Arg Ala  
 65 70 75 80

Gly Trp Leu Ala Gly Leu Leu Cys Pro Asp Pro Arg Pro Leu Glu Leu  
 85 90 95

Ala Leu Leu Ile Leu Gly Val Gly Leu Leu Asp Phe Cys Gly Gln Val  
 100 105 110

Cys Phe Thr Pro Leu Glu Ala Leu Leu Ser Asp Leu Phe Arg Asp Pro  
 115 120 125

Asp His Cys Arg Gln Ala Tyr Ser Val Tyr Ala Phe Met Ile Ser Leu  
 130 135 140

Gly Gly Cys Leu Gly Tyr Leu Leu Pro Ala Ile Asp Trp Asp Thr Ser  
 145 150 155 160

Ala Leu Ala Pro Tyr Leu Gly Thr Gln Glu Glu Cys Leu Phe Gly Leu  
 165 170 175

Leu Thr Leu Ile Phe Leu Thr Cys Val Ala Ala Thr Leu Leu Val Ala  
 180 185 190

Glu Glu Ala Ala Leu Gly Pro Thr Glu Pro Ala Glu Gly Leu Ser Ala  
 195 200 205

Pro Ser Leu Ser Pro His Cys Cys Pro Cys Arg Ala Arg Leu Ala Phe  
 210 215 220

Arg Asn Leu Gly Ala Leu Leu Pro Arg Leu His Gln Leu Cys Cys Arg  
 225 230 235 240

Met Pro Arg Thr Leu Arg Arg Leu Phe Val Ala Glu Leu Cys Ser Trp  
 245 250 255

Met Ala Leu Met Thr Phe Thr Leu Phe Tyr Thr Asp Phe Val Gly Glu  
 260 265 270

Gly Leu Tyr Gln Gly Val Pro Arg Ala Glu Pro Gly Thr Glu Ala Arg  
 275 280 285

Arg His Tyr Asp Glu Gly Lys Ala Leu Ala Ala Ser Arg Gly Trp Cys  
 290 295 300

Gly Ser Arg Pro Pro Glu Thr Thr Leu Gly Ala Val Ser Gly Leu Val  
 305 310 315 320

Pro Leu His Pro Gly Pro Asp Phe Ser Val Arg Lys Val Gly Met Asp  
 325 330 335

Pro Ile Cys Ile His Gly Phe Ser Trp Val Trp Asn Ile Ser Ala Cys  
 340 345 350

Gly Phe Arg Lys Ala Ser Gly Cys Ser Arg Ser Leu Ile Arg Val Val  
 355 360 365

Ala Pro Val  
 370

&lt;210&gt; 853

&lt;211&gt; 75

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 853

Met Gly Pro Leu Trp Gly Ala Pro Leu Arg Ala Trp Ala Ala Gly Ser  
 1 5 10 15

Val Gly Cys Pro Cys Cys Leu Ser Cys Ala Ser Pro Ser Ser Ile Ser  
 20 25 30

Ser Ala Gly Asp Pro Leu Ala Ser Cys Ser Thr Cys Gly Ser Thr Trp  
 35 40 45

Glu Ile Pro Leu Thr Trp Met Thr Met Asp His Leu Leu Val Arg Tyr  
 50 55 60

Tyr Leu Ser Gln Ala Arg Trp Cys Thr Thr Gly  
 65 70 75

&lt;210&gt; 854

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 854

Ile Ser Tyr His His Val Lys Ala Ser His Leu Lys Ile Lys Ile Gln

```

1      5      10      15
Ile Ser Leu Lys Pro Glu Val Leu Val Pro Leu His Cys Leu Pro Leu
      20      25      30
Ser Pro Thr Pro Arg Glu Glu Ser Gly Gly Phe Leu Phe Ser Ile Ala
      35      40      45
Ile Ala Ala Val Gly Phe Leu Val Gln
      50      55

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<210> 855
<211> 10
<212> PRT
<213> Homo sapiens
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```
<400> 855
Trp Ala Ser Met Ser Ser Val Phe Gly Leu
  1                      5                10
```

```
<210> 856
<211> 5
<212> PRT
<213> Homo sapiens
```

<400> 856  
Ser Phe Ala Thr Cys  
1 5

```
<210> 857
<211> 73
<212> PRT
<213> Homo sapiens.
```

<400> 857  
Met Trp Leu Pro Ala Trp Ala Ala Ile Glu Thr Phe Ser Thr Cys Ser  
1 5 10 15

Ser Leu Ser Leu Ser Phe Gln Pro Arg Trp Ala Leu Ala Ser Glu Gly  
20 25 30

Cys Ala Gly Ser Tyr Val Thr Thr His Arg Ala Leu Gly Ala His Leu  
35 40 45

Trp Pro Leu Trp Ser Asp Gln Phe Leu Gly Lys Gly Leu Gly Leu Arg  
50 55 60

Ile Pro Phe Ile Thr His Ala His Gln  
65 70

<210> 858  
<211> 36

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (17)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 858

Met	Ala	Gly	Glu	Glu	Met	Ala	Trp	Gly	Ala	Arg	Leu	Trp	Ile	Met	Cys
1				5				10						15	

Xaa	Leu	Leu	Phe	Leu	Ala	Ala	Ser	Glu	Gly	Ile	Met	Pro	Arg	Leu	Arg
			20					25					30		

Ala	Ser	Ala	Trp
			35

&lt;210&gt; 859

&lt;211&gt; 352

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 859

Val	Ser	Leu	Leu	Leu	Trp	Gly	Ile	Ser	Ile	Arg	Gly	Ala	Asp	Ala	Cys
1				5					10					15	

Ala	Asp	Ala	His	Leu	Phe	Cys	Lys	Glu	Cys	Leu	Ile	Arg	Tyr	Ala	Gln
			20					25					30		

Glu	Ala	Val	Phe	Gly	Ser	Gly	Lys	Leu	Glu	Leu	Ser	Cys	Met	Glu	Gly
		35					40					45			

Ser	Cys	Thr	Cys	Ser	Phe	Pro	Thr	Ser	Glu	Leu	Glu	Lys	Val	Leu	Pro
	50					55					60				

Gln	Thr	Ile	Leu	Tyr	Lys	Tyr	Tyr	Glu	Arg	Lys	Ala	Glu	Glu	Glu	Val
65					70					75					80

Ala	Ala	Ala	Tyr	Ala	Asp	Glu	Leu	Val	Arg	Cys	Pro	Ser	Cys	Ser	Phe
				85					90					95	

Pro	Ala	Leu	Leu	Asp	Ser	Asp	Val	Lys	Arg	Phe	Ser	Cys	Pro	Asn	Pro
		100						105					110		

His	Cys	Arg	Lys	Glu	Thr	Cys	Arg	Lys	Cys	Gln	Gly	Leu	Trp	Lys	Glu
		115					120					125			

His	Asn	Gly	Leu	Thr	Cys	Glu	Glu	Leu	Ala	Glu	Lys	Asp	Asp	Ile	Lys
	130					135					140				

Tyr	Arg	Thr	Ser	Ile	Glu	Glu	Lys	Met	Thr	Ala	Ala	Arg	Ile	Arg	Lys
145					150					155					160

Cys	His	Lys	Cys	Gly	Thr	Gly	Leu	Ile	Lys	Ser	Glu	Gly	Cys	Asn	Arg
				165					170					175	

Met	Ser	Cys	Arg	Cys	Gly	Ala	Gln	Met	Cys	Tyr	Leu	Cys	Arg	Val	Ser
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

180	185	190
Ile Asn Gly Tyr Asp His Phe Cys Gln His Pro Arg Ser Pro Gly Ala		
195	200	205
Pro Cys Gln Glu Cys Ser Arg Cys Ser Leu Trp Thr Asp Pro Thr Glu		
210	215	220
Asp Asp Glu Lys Leu Ile Glu Glu Ile Gln Lys Glu Ala Glu Glu Glu		
225	230	235 240
Gln Lys Arg Lys Asn Gly Glu Asn Thr Phe Lys Arg Ile Gly Pro Pro		
245	250	255
Leu Glu Lys Pro Val Glu Lys Val Gln Arg Val Glu Ala Leu Pro Arg		
260	265	270
Pro Val Pro Gln Asn Leu Pro Gln Pro Gln Met Pro Pro Tyr Ala Phe		
275	280	285
Ala His Pro Pro Phe Pro Leu Pro Pro Val Arg Pro Val Phe Asn Asn		
290	295	300
Phe Pro Leu Asn Met Gly Pro Ile Pro Ala Pro Tyr Val Pro Pro Leu		
305	310	315 320
Pro Asn Val Arg Val Asn Tyr Asp Phe Gly Pro Ile His Met Pro Leu		
325	330	335
Glu His Asn Leu Pro Met His Phe Gly Pro Gln Pro Arg His Arg Phe		
340	345	350

&lt;210&gt; 860

&lt;211&gt; 63

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 860

Met Ile Thr Phe Leu Pro Ile Ile Phe Ser Ile Leu Val Val Val Thr
1 5 10 15

Phe Val Ile Gly Asn Phe Ala Asn Gly Phe Ile Ala Leu Val Asn Ser
20 25 30

Thr Glu Trp Val Lys Arg Gln Lys Ile Ser Phe Ala Asp Gln Ile Val
35 40 45

Thr Ala Leu Ala Val Ser Arg Val Gly Leu Leu Trp Val Leu Leu
50 55 60

&lt;210&gt; 861

&lt;211&gt; 8

&lt;212&gt; PRT

<213> Homo sapiens

<400> 861

Leu Thr Met Leu Phe Asn Val Ile

1 5

<210> 862

<211> 7

<212> PRT

<213> Homo sapiens

<400> 862

Thr Tyr Ile His Phe Leu Asp

1 5

<210> 863

<211> 53

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (35)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 863

Thr Glu Glu Phe Lys Tyr Ala Val Ser Cys Asn Cys Gly Thr Ala Ala

1 5 10 15

Trp Val Arg Val Arg Glu Arg Glu Arg Lys Arg Glu Lys Lys Lys Lys

20 25 30

Lys Arg Xaa Ala Ala Leu Glu Asp Pro Ser Arg Gly Pro Ser Leu Arg

35 40 45

Val His Ala Thr Ser

50

<210> 864

<211> 22

<212> PRT

<213> Homo sapiens

<400> 864

Leu Val Leu Phe Ile Thr Leu Leu Pro Gly Lys Leu Ala His Ser Trp

1 5 10 15

His Thr Val Asn Val Gln

20

<210> 865

<211> 2

<212> PRT  
 <213> Homo sapiens

<400> 865  
 Gly Cys  
 1

<210> 866  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<400> 866  
 Met Ile Leu Tyr Ile Cys Leu Leu Leu Lys Ile Trp Gly Cys Ser Leu  
 1 5 10 15  
 Pro Cys Asn Phe Ser Phe Pro Leu Asp Leu Arg Lys Val Met Asp Phe  
 20 25 30  
 Gln Phe Val Gln His Phe Phe Leu  
 35 40

<210> 867  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 867  
 Ser Phe Cys Met Gly Thr Met  
 1 5

<210> 868  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (2)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (25)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 868  
 Ser Xaa Ile Val Gly Leu Ala Ile Trp Arg Gly Gly Leu Cys Gln Glu  
 1 5 10 15  
 Leu Pro Leu Glu Arg Phe Leu Leu Xaa Thr Val Phe Gly Ser Asp Leu  
 20 25 30

Ser Leu Leu Ser Gly Gly Asp Leu Cys Leu Glu Leu Leu Gly Gly Leu  
 465

35                      40                      45  
 Cys Leu Glu Val Cys Leu Arg Gly Asp Ile Cys Leu Gly Pro Leu Arg  
     50                      55                      60  
 Val Ser Val Ser Glu Leu Ser Leu Leu Cys Leu Ser Val Gln Gly Gln  
     65                      70                      75                      80  
 Gln Lys Val Cys Pro Phe  
                             85

&lt;210&gt; 869

&lt;211&gt; 33

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 869

Lys Ile Leu Val Ser Tyr Leu Met Pro Gly Met Met Arg Ile Glu Asn  
     1                      5                      10                      15

Phe Ser Ile Phe Met Cys Leu Thr Gly Cys Leu Gly Ile Asn Phe Ala  
             20                      25                      30

Phe

&lt;210&gt; 870

&lt;211&gt; 288

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (87)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (99)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (230)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (263)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (264)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.



&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (270)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (275)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 870

Met Ala Arg Ile Ser Phe Ser Tyr Leu Cys Pro Ala Ser Trp Tyr Phe  
 1 5 10 15

Thr Val Pro Thr Val Ser Pro Phe Leu Arg Gln Arg Val Ala Phe Leu  
 20 25 30

Gly Leu Phe Phe Ile Ser Cys Leu Leu Leu Leu Met Leu Ile Ile Asp  
 35 40 45

Phe Arg His Trp Ser Ala Ser Leu Pro Arg Asp Arg Gln Tyr Glu Arg  
 50 55 60

Tyr Leu Ala Arg Val Gly Glu Leu Glu Ala Thr Asp Thr Glu Asp Pro  
 65 70 75 80

Asn Leu Asn Tyr Gly Leu Xaa Val Asp Cys Gly Ser Ser Gly Ser Arg  
 85 90 95

Ile Phe Xaa Tyr Phe Trp Pro Arg His Asn Gly Asn Pro His Asp Leu  
 100 105 110

Leu Asp Ile Lys Gln Met Arg Asp Arg Asn Ser Gln Pro Val Val Lys  
 115 120 125

Lys Ile Lys Pro Gly Ile Ser Ala Met Ala Asp Thr Pro Glu His Ala  
 130 135 140

Ser Asp Tyr Leu Arg Pro Leu Leu Ser Phe Ala Ala Ala His Val Pro  
 145 150 155 160

Val Lys Lys His Lys Glu Thr Pro Leu Tyr Ile Leu Cys Thr Ala Gly  
 165 170 175

Met Arg Leu Leu Pro Glu Arg Lys Gln Leu Ala Ile Leu Ala Asp Leu  
 180 185 190

Val Lys Asp Leu Pro Leu Glu Phe Asp Phe Leu Phe Ser Gln Ser Gln  
 195 200 205

Ala Glu Val Ile Ser Gly Lys Gln Glu Gly Val Tyr Ala Trp Ile Gly  
 210 215 220

Ile Asn Phe Val Leu Xaa Arg Phe Asp His Glu Asp Glu Ser Asp Ala  
 225 230 235 240

Glu Ala Thr Gln Glu Leu Ala Ala Gly Arg Arg Arg Thr Val Gly Ile  
 245 250 255

Leu Asp Met Gly Gly Ala Xaa Xaa Gln Ile Ala Tyr Glu Xaa Pro Thr

260	265	270
Phe Pro Xaa Lys Lys Thr Pro Pro Leu Phe Pro Leu Leu Gly Gly Ile		
275	280	285

<210> 871  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (66)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 871  
 Pro Leu Gly Arg Glu Pro Leu Ala Gly Phe Leu Ser Phe Leu Ser Phe  
     1                    5                    10                    15  
 Ser Leu Leu Trp Cys Leu Glu Ala Phe Pro Arg Leu Gln Phe Leu Thr  
             20                    25                    30  
 Thr Leu Thr Asp Phe Ala Ile Val Leu Ser Pro Pro Leu Ser Phe Pro  
             35                    40                    45  
 Lys Leu Thr Leu Trp Arg Leu Ile Lys Arg Lys Asn His Arg Pro Gly  
     50                    55                    60  
 Ala Xaa Leu Thr Pro Arg Arg Arg Ala Asn His Leu Arg Cys Gly Val  
     65                    70                    75                    80  
 Arg Asp Gln Pro Asp Gln Asn Arg Glu Thr Pro Ser Leu Leu Asn Asn  
             85                    90                    95  
 Thr Lys Leu Ala Gly Arg Gly Gly Ala Arg Leu  
             100                    105

<210> 872  
 <211> 64  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (7)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (27)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 872

Ser Trp Val Ile Val Val Xaa Ile Trp Gly Tyr Leu Leu Glu Gly His  
 1 5 10 15  
 Gly Val Pro Phe Cys Lys Ser Tyr Gly Pro Xaa Pro Trp Lys Leu His  
 20 25 30  
 Thr His His Ala Ala Tyr Asn Ser Gly Ser Ser Gln Val Tyr Arg Ile  
 35 40 45  
 Leu Gly Asn Ser Pro Cys Pro Val Leu Ile His Cys Ser Phe Ser Gly  
 50 55 60

<210> 873  
 <211> 14  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (9)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (14)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 873  
 Trp Lys Gly Leu Leu Glu Gly Ser Xaa Glu Ala Thr Met Xaa  
 1 5 10

<210> 874  
 <211> 66  
 <212> PRT  
 <213> Homo sapiens

<400> 874  
 Met Ser Trp Val Ile Val Val Ile Ile Trp Gly Tyr Leu Leu Glu Gly  
 1 5 10 15  
 His Gly Val Pro Phe Cys Lys Ser Tyr Gly Pro Ser Pro Trp Lys Leu  
 20 25 30  
 His Thr His His Ala Ala Tyr Asn Ser Gly Ser Ser Gln Val Tyr Arg  
 35 40 45  
 Ile Leu Glu Thr Leu Met Ser Gly Ser Thr His Cys Ser Phe Ser Gly  
 50 55 60  
 Thr Phe  
 65

<210> 875  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (31)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (57)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 875  
 Met Pro Arg Ala Pro Trp Arg Ile Pro Leu Cys Ala Leu Pro Thr Leu  
           1                  5                  10                  15  
 Cys Leu Gly Ser Pro Leu Pro Ser Gln Pro Thr His Pro Ile Xaa Tyr  
                   20                  25                  30  
 Asp His Arg Ala Pro Thr Trp Lys Met Ala His Pro Gly Gly Pro Arg  
           35                  40                  45  
 Ser Ser His Ser Pro Arg Thr Trp Xaa Thr Pro Ser Ser Gln Thr Lys  
           50                  55                  60  
 Ala Ala Leu Pro Ala Gly Gly Ala Arg Asn Ser Pro Leu Gln Leu Cys  
           65                  70                  75                  80  
 Thr Arg Ser Arg Phe Cys Gly Thr Pro Met  
                   85                  90

<210> 876  
 <211> 127  
 <212> PRT  
 <213> Homo sapiens

<400> 876  
 Met Pro Arg Ala Pro Trp Arg Ile Pro Leu Cys Ala Leu Pro Thr Leu  
           1                  5                  10                  15  
 Cys Leu Gly Ser Pro Leu Pro Ser Gln Pro Thr His Pro Ile Phe Tyr  
                   20                  25                  30  
 Asp His Arg Ala Pro Thr Trp Lys Met Ala His Pro Gly Gly Pro Arg  
           35                  40                  45  
 Ser Ser His Ser Pro Arg Gly Pro Gly Gly His Pro Ala Leu Arg Gln  
           50                  55                  60  
 Arg Leu Pro Cys Arg Arg Gly Glu Pro Glu Thr Ala Leu Cys Ser Ser  
           65                  70                  75                  80  
 Ala Pro Gly Ala Gly Phe Ala Glu Pro Pro Cys Lys Ala Ser Pro Gly  
                   85                  90                  95

Trp Gly Pro Pro Ser Arg Gly Pro Gln Gly Asp Arg Ser Gln Gly Glu  
                   100                  105                  110

Trp Leu Pro Ala Leu Gly Thr Pro Cys Gly Gly Pro Asp Asp Ser  
           115                  120                  125

<210> 877

<211> 66

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (43)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 877

Met Ala Gly Gln Phe Arg Ser Tyr Val Trp Asp Pro Leu Leu Ile Leu  
   1                  5                  10                  15

Ser Gln Ile Val Leu Met Gln Thr Val Tyr Tyr Gly Ser Leu Gly Leu  
           20                  25                  30

Trp Leu Ala Leu Val Asp Gly Leu Val Arg Xaa Ala Pro Arg Trp Thr  
           35                  40                  45

Arg Cys Ser Thr Pro Arg Ser Trp Ala Phe Pro Pro Leu Gln Ala Gly  
       50                  55                  60

Ser Pro  
   65

<210> 878

<211> 124

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (28)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 878

Thr Gln Ile Pro Thr His Ile Ser Arg Tyr Thr Pro Leu His Ser Ser  
   1                  5                  10                  15

Leu Gly Asn Arg Ala Arg Leu Arg Leu Lys Lys Xaa Lys Ile Lys Tyr  
           20                  25                  30

Ala Tyr Leu Cys Pro Pro Ser Leu Lys Gln Leu Leu Asn Tyr Ala Val  
           35                  40                  45

Ile Asn Gly Leu Ser Ser Ala Asn Tyr Phe Cys Leu Tyr Thr Lys Val  
       50                  55                  60

Pro Gln Ala Met Leu Leu Leu Ala Ser Gly Leu Ser Ser Ala Phe Pro  
 65 70 75 80  
 Tyr Asp Ser Leu Gly Phe Thr Leu Ser Met Leu Leu Phe Phe Glu Arg  
 85 90 95  
 Asn Lys Ser Arg Val Glu Val Leu Ala Lys Glu Pro Ser Ala Pro Ser  
 100 105 110  
 Ser Tyr Trp Asp Ser Glu Asn Arg Gly Cys Gln Leu  
 115 120

<210> 879  
 <211> 39  
 <212> PRT  
 <213> Homo sapiens

<400> 879  
 Met Ala Gly Gln Phe Arg Ser Tyr Val Trp Asp Pro Leu Leu Ile Leu  
 1 5 10 15  
 Ser Gln Ser Ser Ser Cys Arg Pro Cys Ile Thr Ala Arg Trp Ala Cys  
 20 25 30  
 Gly Trp Arg Trp Trp Thr Gly  
 35

<210> 880  
 <211> 67  
 <212> PRT  
 <213> Homo sapiens

<400> 880  
 Met Ser Leu Cys Arg Ile Leu Gly Tyr Ser Phe Ser Ser Arg Leu Ser  
 1 5 10 15  
 Ser Leu Ile Leu Pro Leu Ala Val Phe His Tyr Cys Leu Ser Cys Pro  
 20 25 30  
 Leu His Phe Lys Leu Ser Phe Lys Tyr Leu Pro Phe Pro Ser Phe Pro  
 35 40 45  
 Phe Ser Ser Leu Pro Cys Pro Ala Leu Pro Cys Pro Ala Leu Pro Ser  
 50 55 60  
 Pro Pro Leu  
 65

<210> 881  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<400> 881

Met Ser Leu Cys Arg Ile Leu Gly Tyr Ser Phe Ser Ser Arg Leu Ser  
 1 5 10 15  
 Ser Leu Ile Leu Pro Leu Ala Val Phe His Tyr Cys Leu Ser Cys Pro  
 20 25 30  
 Leu His Phe Lys Leu Ser Phe Lys Tyr Leu Pro Phe Pro Ser Phe Pro  
 35 40 45  
 Phe Ser Ser Leu Pro Cys Pro Ala Leu Pro Cys Pro Ala Leu Pro Ser  
 50 55 60  
 Pro Pro Leu Pro Cys Pro Pro Leu Pro Ser Pro Pro Leu Pro Leu Pro  
 65 70 75 80  
 Ser Leu Ser Phe Phe Arg  
 85

<210> 882  
 <211> 55  
 <212> PRT  
 <213> Homo sapiens

<400> 882  
 Met Cys Val Gly Leu Phe Leu Ser Ser Val Phe Phe His Ile Cys Val  
 1 5 10 15  
 His Pro Phe Ala Asn Ala Thr Leu Ser Cys Leu Leu Glu Ile Gly Lys  
 20 25 30  
 Leu Cys Glu Ser Phe Asn Phe Val Leu Phe Gln Ile Val Leu Ala Ile  
 35 40 45  
 Leu Val Pro Leu Thr Phe Ile  
 50 55

<210> 883  
 <211> 73  
 <212> PRT  
 <213> Homo sapiens

<400> 883  
 Thr Leu Phe Val Ser Tyr Gln Leu Ser Asn Pro Gln Tyr Ser Ser Phe  
 1 5 10 15  
 Ile Ser Gln Asn Arg Lys Leu Lys Gln Arg Glu Glu Lys Leu His Glu  
 20 25 30  
 Arg Phe Tyr Thr Ala Val Arg Ser Leu Asn Trp Ile Leu Asn Leu Ala  
 35 40 45  
 Phe Trp Leu Glu Ser Pro Ser Phe Tyr Gln Leu Cys Ile Ala Val Arg  
 50 55 60  
 Val Asp Ser Pro Trp Lys Gly Lys Ser  
 65 70

<210> 884  
 <211> 48  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (29)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 884  
 Met Lys Pro Pro Pro Leu Phe Phe Phe Leu Lys Ile Val Leu Xaa Ile  
     1                    5                    10                    15  
 Trp Gly Pro Leu Trp Phe His Met Asn Phe Arg Phe Xaa Phe Ser Ile  
                     20                    25                    30  
 Ser Met Lys Asn Ala Ile Gly Ile Leu Ile Gly Ile Ala Leu Asn Leu  
             35                    40                    45

<210> 885  
 <211> 48  
 <212> PRT  
 <213> Homo sapiens

<400> 885  
 Met Lys Pro Pro Pro Leu Phe Phe Phe Leu Lys Ile Val Leu Ala Ile  
     1                    5                    10                    15  
 Trp Gly Pro Leu Trp Phe His Met Asn Phe Arg Phe Val Phe Ser Ile  
                     20                    25                    30  
 Ser Met Lys Asn Ala Ile Gly Ile Leu Ile Gly Ile Ala Leu Asn Leu  
             35                    40                    45

<210> 886  
 <211> 214  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE



$\langle 222 \rangle$  (199)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

$\langle 222 \rangle$ , (206)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

<221> SITE

<222> (214)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 886

Met Leu Gly Ala Arg Ala Trp Leu Gly Arg Val Leu Leu Leu Pro Arg  
1 5 10 15

Ala Gly Ala Gly Leu Ala Ala Ser Arg Arg Cys Pro Gly Val Trp Pro  
20 25 30

Arg Thr Trp Pro His Arg Ser Pro Ser Arg Gly Ser Ser Ser Arg Asp  
35 40 45

Lys Asp Arg Ser Ala Thr Val Ser Ser Ser Val Pro Met Pro Ala Gly  
 . 50 55 60

Gly Lys Gly Ser His Pro Ser Ser Thr Pro Gln Arg Val Pro Asn Arg  
65 70 75 80

Leu Ile His Glu Lys Ser Pro Tyr Leu Leu Gln His Ala Tyr Asn Pro  
85 90 95

Val	Asp	Trp	Tyr	Pro	Trp	Gly	Gln	Glu	Ala	Phe	Asp	Lys	Ala	Arg	Lys
			100					105					110		

Glu Asn Lys Pro Ile Phe Leu Ser Val Gly Tyr Ser Thr Cys His Trp  
115 120 125

Cys His Met Met Glu Glu Glu Ser Phe Gln Asn Glu Glu Ile Gly Arg  
130 135 140

Leu Leu Ser Glu Asp Phe Val Ser Val Lys Val Asp Arg Glu Glu Arg  
145 150 155 160

Pro Asp Val Asp Lys Val Tyr Met Thr Phe Val Gln Ala Thr Ser Ser  
165 170 175

Gly Gly Gly Trp Pro Met Asn Val Trp Leu Thr Pro Asn Leu Gln Pro  
180 185 190

Phe Val Gly Gly Thr Ile Xaa Leu Leu Lys Asp Gly Leu Xaa Arg Val  
195 200 205

Gly Ser Ala Gln Cys Xaa  
210

<210> 887

<211> 43

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 887

Met Leu Gly Ala Arg Ala Trp Leu Gly Arg Val Leu Leu Leu Pro Arg  
 1 5 10 15

Ala Gly Ala Gly Leu Ala Ala Ser Arg Arg Ser Ala Cys Ser Pro Thr  
 20 25 30

Ser Arg Leu Asn Ser Leu Arg Ser Leu Ile Pro  
 35 40

&lt;210&gt; 888

&lt;211&gt; 802

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 888

Met Leu Gly Ala Arg Ala Trp Leu Gly Arg Val Leu Leu Leu Pro Arg  
 1 5 10 15

Ala Gly Ala Gly Leu Ala Ala Ser Arg Arg Cys Pro Gly Val Trp Pro  
 20 25 30

Arg Thr Trp Pro His Arg Ser Pro Ser Arg Gly Ser Ser Ser Arg Asp  
 35 40 45

Lys Asp Arg Ser Ala Thr Val Ser Ser Ser Val Pro Met Pro Ala Gly  
 50 55 60

Gly Lys Gly Ser His Pro Ser Ser Thr Pro Gln Arg Val Pro Asn Arg  
 65 70 75 80

Leu Ile His Glu Lys Ser Pro Tyr Leu Leu Gln His Ala Tyr Asn Pro  
 85 90 95

Val Asp Trp Tyr Pro Trp Gly Gln Glu Ala Phe Asp Lys Ala Arg Lys  
 100 105 110

Glu Asn Lys Pro Ile Phe Leu Ser Val Gly Tyr Ser Thr Cys His Trp  
 115 120 125

Cys His Met Met Glu Glu Glu Ser Phe Gln Asn Glu Glu Ile Gly Arg  
 130 135 140

Leu Leu Ser Glu Asp Phe Val Ser Val Lys Val Asp Arg Glu Glu Arg  
 145 150 155 160

Pro Asp Val Asp Lys Val Tyr Met Thr Phe Val Gln Ala Thr Ser Ser  
 165 170 175

Gly Gly Gly Trp Pro Met Asn Val Trp Leu Thr Pro Asn Leu Gln Pro  
 180 185 190

Phe Val Gly Gly Thr Tyr Phe Pro Pro Glu Asp Gly Leu Thr Arg Val  
 195 200 205

Gly Phe Arg Thr Val Leu Leu Arg Ile Arg Glu Gln Trp Lys Gln Asn  
 210 215 220  
 Lys Asn Thr Leu Leu Glu Asn Ser Gln Arg Val Thr Thr Ala Leu Leu  
 225 230 235 240  
 Ala Arg Ser Glu Ile Ser Val Gly Asp Arg Gln Leu Pro Pro Ser Ala  
 245 250 255  
 Ala Thr Val Asn Asn Arg Cys Phe Gln Gln Leu Asp Glu Gly Tyr Asp  
 260 265 270  
 Glu Glu Tyr Gly Gly Phe Ala Glu Ala Pro Lys Phe Pro Thr Pro Val  
 275 280 285  
 Ile Leu Ser Phe Leu Phe Ser Tyr Trp Leu Ser His Arg Leu Thr Gln  
 290 295 300  
 Asp Gly Ser Arg Ala Gln Gln Met Ala Leu His Thr Leu Lys Met Met  
 305 310 315 320  
 Ala Asn Gly Gly Ile Arg Asp His Val Gly Gln Gly Phe His Arg Tyr  
 325 330 335  
 Ser Thr Asp Arg Gln Trp His Val Pro His Phe Glu Lys Met Leu Tyr  
 340 345 350  
 Asp Gln Ala Gln Leu Ala Val Ala Tyr Ser Gln Ala Phe Gln Leu Ser  
 355 360 365  
 Gly Asp Glu Phe Tyr Ser Asp Val Ala Lys Gly Ile Leu Gln Tyr Val  
 370 375 380  
 Ala Arg Ser Leu Ser His Arg Ser Gly Gly Phe Tyr Ser Ala Glu Asp  
 385 390 395 400  
 Ala Asp Ser Pro Pro Glu Arg Gly Gln Arg Pro Lys Glu Gly Ala Tyr  
 405 410 415  
 Tyr Val Trp Thr Val Lys Glu Val Gln Gln Leu Leu Pro Glu Pro Val  
 420 425 430  
 Leu Gly Ala Thr Glu Pro Leu Thr Ser Gly Gln Leu Leu Met Lys His  
 435 440 445  
 Tyr Gly Leu Thr Glu Ala Gly Asn Ile Ser Pro Ser Gln Asp Pro Lys  
 450 455 460  
 Gly Glu Leu Gln Gly Gln Asn Val Leu Thr Val Arg Tyr Ser Leu Glu  
 465 470 475 480  
 Leu Thr Ala Ala Arg Phe Gly Leu Asp Val Glu Ala Val Arg Thr Leu  
 485 490 495  
 Leu Asn Ser Gly Leu Glu Lys Leu Phe Gln Ala Arg Lys His Arg Pro  
 500 505 510  
 Lys Pro His Leu Asp Ser Lys Met Leu Ala Ala Trp Asn Gly Leu Met  
 515 520 525

Val Ser Gly Tyr Ala Val Thr Gly Ala Val Leu Gly Gln Asp Arg Leu  
 530 535 540  
 Ile Asn Tyr Ala Thr Asn Gly Ala Lys Phe Leu Lys Arg His Met Phe  
 545 550 555 560  
 Asp Val Ala Ser Gly Arg Leu Met Arg Thr Cys Tyr Thr Gly Pro Gly  
 565 570 575  
 Gly Thr Val Glu His Ser Asn Pro Pro Cys Trp Gly Phe Leu Glu Asp  
 580 585 590  
 Tyr Ala Phe Val Val Arg Gly Leu Leu Asp Leu Tyr Glu Ala Ser Gln  
 595 600 605  
 Glu Ser Ala Trp Leu Glu Trp Ala Leu Arg Leu Gln Asp Thr Gln Asp  
 610 615 620  
 Arg Leu Phe Trp Asp Ser Gln Gly Gly Gly Tyr Phe Cys Ser Glu Ala  
 625 630 635 640  
 Glu Leu Gly Ala Gly Leu Pro Leu Arg Leu Lys Asp Asp Gln Asp Gly  
 645 650 655  
 Ala Glu Pro Ser Ala Asn Ser Val Ser Ala His Asn Leu Leu Arg Leu  
 660 665 670  
 His Gly Phe Thr Gly His Lys Asp Trp Met Asp Lys Cys Val Cys Leu  
 675 680 685  
 Leu Thr Ala Phe Ser Glu Arg Met Arg Arg Val Pro Val Ala Leu Pro  
 690 695 700  
 Glu Met Val Arg Ala Leu Ser Ala Gln Gln Gln Thr Leu Lys Gln Ile  
 705 710 715 720  
 Val Ile Cys Gly Asp Arg Gln Ala Lys Asp Thr Lys Ala Leu Val Gln  
 725 730 735  
 Cys Val His Ser Val Tyr Ile Pro Asn Lys Val Leu Ile Leu Ala Asp  
 740 745 750  
 Gly Asp Pro Ser Ser Phe Leu Ser Arg Gln Leu Pro Phe Leu Ser Thr  
 755 760 765  
 Leu Arg Arg Leu Glu Asp Gln Ala Thr Ala Tyr Val Cys Glu Asn Gln  
 770 775 780  
 Ala Cys Ser Val Pro Ile Thr Asp Pro Cys Glu Leu Arg Lys Leu Leu  
 785 790 795 800  
 His Pro

&lt;210&gt; 889

&lt;211&gt; 98

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 889

Met His Cys Cys Gln Leu Pro Trp Arg Cys Ala Gln Ala Pro Gln Glu  
 1 5 10 15

Ala Phe Leu Leu Cys Leu Leu Phe Leu Ile Leu Val Leu Val Leu Leu  
 20 25 30

Gly Cys Ser Arg Gly Leu Pro Gly His Thr Pro Trp Arg Leu His Pro  
 35 40 45

Ala Ala Ala Ala Leu Leu Ala Pro Leu Leu His Asp Ala Leu Gly Ala  
 50 55 60

Cys Gly Phe Gln Gly Pro Glu Tyr Leu Leu Pro Cys Leu Leu Pro Leu  
 65 70 75 80

Pro Lys Pro Gly Gln Leu Gln Gly Pro Trp Gly Pro Leu Trp Ala Leu  
 85 90 95

Leu Pro

&lt;210&gt; 890

&lt;211&gt; 25

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (9)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 890

Cys Ala Val Arg Phe Arg Glu Gln Xaa Ala Pro Glu Arg Val Phe Leu  
 1 5 10 15

Pro Thr Arg Gly Arg Lys Ser Glu Pro  
 20 25

&lt;210&gt; 891

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 891

Leu Pro Arg Pro Cys Ala Pro Ser Pro Val Trp Arg Gln Val Gly Arg  
 1 5 10 15

Glu Glu Ala Ser Leu Leu  
 20

&lt;210&gt; 892

&lt;211&gt; 98

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 892

Met His Cys Cys Gln Leu Pro Trp Arg Cys Ala Gln Ala Pro Gln Glu  
1 5 10 15

Ala Phe Leu Leu Cys Leu Leu Phe Leu Ile Leu Val Leu Val Leu Leu  
20 25 30

Gly Cys Ser Arg Gly Leu Pro Gly His Thr Pro Trp Arg Leu His Pro  
35 40 45

Ala Ala Ala Ala Leu Leu Ala Pro Leu Leu His Asp Ala Leu Gly Ala  
50 55 60

Cys Gly Phe Gln Gly Pro Glu Tyr Leu Leu Pro Cys Leu Leu Pro Leu  
65 70 75 80

Pro Lys Pro Gly Gln Leu Gln Gly Pro Trp Gly Pro Leu Trp Ala Leu  
85 90 95

Leu Pro

&lt;210&gt; 893

&lt;211&gt; 99

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 893

Ser Lys Ser Asn Pro Lys Pro Arg Cys Gln Lys Gly Thr Pro Trp Val  
1 5 10 15

Ile Arg Pro His Phe His Ser Asp Gly Val Ala Ser Ser Lys Thr Gly  
20 25 30

Leu Thr Val Phe Gln Met Ser Gly Leu Gln Ala Pro Ile Pro Ser Arg  
35 40 45

Cys Ser Ala Ala Ala Leu Ile Leu Arg Gly Gly Leu Pro Cys Thr Pro  
50 55 60

Leu Glu Ala Phe His Trp Gly Asn Cys Leu Pro Gly Ser Ala Leu Arg  
65 70 75 80

Ile Arg Ile Ala Lys Ala Gly Gln Ser Leu Pro Gln Gly Cys Ser Thr  
85 90 95

Gly Gln Ala

&lt;210&gt; 894

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 894

Met Lys Pro Ala Thr Ala Ser Ala Leu Leu Leu Leu Leu Gly Leu  
 1 5 10 15  
 Ala Trp Thr Gln Gly Ser His Gly Trp Gly Ala Asp Ala Ser Ser Leu  
 20 25 30  
 Gln Lys Arg Ala Gly Arg Ala Asp Gln Val Ser Leu Cys Pro Gln Val  
 35 40 45  
 Thr Leu Gln Gly Pro Trp Ser Pro Leu Ala Leu Leu Pro Gly Leu Gly  
 50 55 60  
 Asn Leu Lys Phe Ser Phe Thr Pro Pro Phe Asn Gly Phe Leu Ser Arg  
 65 70 75 80  
 Val Gln Asp Gly Arg Arg Trp Gln Leu  
 85

&lt;210&gt; 895

&lt;211&gt; 73

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 895

Met Ala Gly Asn Ile Gln Ala Val Glu Thr Gly Tyr Val Leu Ile Cys  
 1 5 10 15  
 Leu Ile Val Pro Leu Leu Leu Cys Gly Leu Arg Glu Gly Gln Glu Val  
 20 25 30  
 Pro Phe Asp Val Asn Lys Ala Lys Tyr Leu Pro Thr Phe Leu Lys Lys  
 35 40 45  
 Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 50 55 60  
 Lys Lys Lys Lys Lys Lys Lys Lys Ile  
 65 70

&lt;210&gt; 896

&lt;211&gt; 72

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 896

Met Ala Gly Asn Ile Gln Ala Val Glu Thr Gly Tyr Val Leu Ile Cys  
 1 5 10 15  
 Leu Ile Val Pro Leu Leu Leu Cys Gly Leu Arg Glu Gly Gln Glu Val  
 20 25 30  
 Pro Phe Asp Val Asn Lys Ala Lys Tyr Leu Pro Thr Phe Leu Lys Lys  
 35 40 45

Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 50 55 60

Lys Lys Lys Lys Lys Lys Lys Lys  
 65 70

<210> 897

<211> 29

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (26)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (29)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 897

Met Tyr Val Trp Val Ser Gly Ala Leu Val Leu Val Leu Ser Pro His  
 1 5 10 15

Pro Ala Ser Arg Thr Leu Cys Leu Met Xaa Gln Ala Xaa  
 20 25

<210> 898

<211> 80

<212> PRT

<213> Homo sapiens

<400> 898

Pro His Cys Ala Ser Arg Ala Val Pro Tyr Pro Pro Gly Pro Ala Ala  
 1 5 10 15

Ala Ala Phe Pro Arg Gln Gly Leu Gln Leu Ala Thr Thr Cys Gly His  
 20 25 30

Ser Ser Asp Pro Ala Cys Phe Gly Gln Cys Pro Cys His Leu Cys Ala  
 35 40 45

Asn His Pro Gly Tyr Leu Trp Ser Tyr Arg Val His Leu Ser Pro Gln  
 50 55 60

Pro His Leu His Pro Pro Gln His Leu Leu Pro Pro His Cys Thr Leu  
 65 70 75 80

<210> 899

<211> 29



<212> PRT  
<213> Homo sapiens

<400> 899  
Met Tyr Val Trp Val Ser Gly Ala Leu Val Leu Val Leu Ser Pro His  
1 5 10 15

Pro Ala Ser Arg Thr Leu Cys Leu Met Ala Gln Ala Val  
20 25

<210> 900  
<211> 53  
<212> PRT  
<213> Homo sapiens

<400> 900  
Met Arg Ile Pro Val Phe Pro Lys Gln Leu Met Phe Thr Gly Leu Val  
1 5 10 15

Phe Leu Leu Leu Leu Ser Lys Asp Glu Gly Ile His Asn Arg Leu Ser  
20 25 30

Leu Glu Asn Thr Asn Asp Gly Gln Leu Phe Gly Val Ile Asn Glu Leu  
35 40 45

Ala Thr Thr Leu Met  
50

<210> 901  
<211> 46  
<212> PRT  
<213> Homo sapiens

<400> 901  
Met Arg Ile Pro Val Phe Pro Lys Gln Leu Met Phe Thr Gly Leu Val  
1 5 10 15

Phe Leu Leu Leu Leu Ser Lys Asp Glu Gly Ile His Asn Arg Leu Ser  
20 25 30

Leu Glu Asn Thr Asn Asp Gly Gln Leu Phe Gly Val Ile Lys  
35 40 45

<210> 902  
<211> 19  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (7)  
<223> Xaa equals any of the naturally occurring L-amino acids  
  
<220>

&lt;221&gt; SITE

&lt;222&gt; (11)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 902

Met Pro Phe Thr Leu Gly Xaa Thr Arg Arg Xaa Arg Gly Leu Ala Lys  
 1 5 10 15

Lys Pro Lys

&lt;210&gt; 903

&lt;211&gt; 531

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 903

Met Leu Cys Ala Leu Leu Leu Leu Pro Ser Leu Leu Gly Ala Thr Arg  
 1 5 10 15

Ala Ser Pro Thr Ser Gly Pro Gln Glu Cys Ala Lys Gly Ser Thr Val  
 20 25 30

Trp Cys Gln Asp Leu Gln Thr Ala Ala Arg Cys Gly Ala Val Gly Tyr  
 35 40 45

Cys Gln Gly Ala Val Trp Asn Lys Pro Thr Ala Lys Ser Leu Pro Cys  
 50 55 60

Asp Val Cys Gln Asp Ile Ala Ala Ala Ala Gly Asn Gly Leu Asn Pro  
 65 70 75 80

Asp Ala Thr Glu Ser Asp Ile Leu Ala Leu Val Met Lys Thr Cys Glu  
 85 90 95

Trp Leu Pro Ser Gln Glu Ser Ser Ala Gly Cys Lys Trp Met Val Asp  
 100 105 110

Ala His Ser Ser Ala Ile Leu Ser Met Leu Arg Gly Ala Pro Asp Ser  
 115 120 125

Ala Pro Ala Gln Val Cys Thr Ala Leu Ser Leu Cys Glu Pro Leu Gln  
 130 135 140

Arg His Leu Ala Thr Leu Arg Pro Leu Ser Lys Glu Asp Thr Phe Glu  
 145 150 155 160

Ala Val Ala Pro Phe Met Ala Asn Gly Pro Leu Thr Phe His Pro Arg  
 165 170 175

Gln Ala Pro Glu Gly Ala Leu Cys Gln Asp Cys Val Arg Gln Val Ser  
 180 185 190

Arg Leu Gln Glu Ala Val Arg Ser Asn Leu Thr Leu Ala Asp Leu Asn  
 195 200 205

Ile Gln Glu Gln Cys Glu Ser Leu Gly Pro Gly Leu Ala Val Leu Cys  
 210 215 220

Lys Asn Tyr Leu Phe Gln Phe Phe Val Pro Ala Asp Gln Ala Leu Arg  
 225 230 235 240  
 Leu Leu Pro Pro Gln Glu Leu Cys Arg Lys Gly Gly Phe Cys Glu Glu  
 245 250 255  
 Leu Gly Ala Pro Ala Arg Leu Thr Gln Val Val Ala Met Asp Gly Val  
 260 265 270  
 Pro Ser Leu Glu Leu Gly Leu Pro Arg Lys Gln Ser Glu Met Gln Met  
 275 280 285  
 Lys Ala Gly Val Thr Cys Glu Val Cys Met Asn Val Val Gln Lys Leu  
 290 295 300  
 Asp His Trp Leu Met Ser Asn Ser Ser Glu Leu Met Ile Thr His Ala  
 305 310 315 320  
 Leu Glu Arg Val Cys Ser Val Met Pro Ala Ser Ile Thr Lys Glu Cys  
 325 330 335  
 Ile Ile Leu Val Asp Thr Tyr Ser Pro Ser Leu Val Gln Leu Val Ala  
 340 345 350  
 Lys Ile Thr Pro Glu Lys Val Cys Lys Phe Ile Arg Leu Cys Gly Asn  
 355 360 365  
 Arg Arg Arg Ala Arg Ala Val His Asp Ala Tyr Ala Ile Val Pro Ser  
 370 375 380  
 Pro Glu Trp Asp Ala Glu Asn Gln Gly Ser Phe Cys Asn Gly Cys Lys  
 385 390 395 400  
 Arg Leu Leu Thr Val Ser Ser His Asn Leu Glu Ser Lys Ser Thr Lys  
 405 410 415  
 Arg Asp Ile Leu Val Ala Phe Lys Gly Gly Cys Ser Ile Leu Pro Leu  
 420 425 430  
 Pro Tyr Met Ile Gln Cys Lys His Phe Val Thr Gln Tyr Glu Pro Val  
 435 440 445  
 Leu Ile Glu Ser Leu Lys Asp Met Met Asp Pro Val Ala Val Cys Lys  
 450 455 460  
 Lys Val Gly Ala Cys His Gly Pro Arg Thr Pro Leu Leu Gly Thr Asp  
 465 470 475 480  
 Gln Cys Ala Leu Gly Pro Ser Phe Trp Cys Arg Ser Gln Glu Ala Ala  
 485 490 495  
 Ser Cys Ala Thr Leu Cys Asn Thr Ala Arg Ser Met Tyr Gly Lys Arg  
 500 505 510  
 Cys Thr Ser Thr Leu Gly Asn Thr Arg Asp Arg Gly Cys Gln Arg Pro  
 515 520 525  
 Arg Ala Cys  
 530

<210> 904  
 <211> 498  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (11)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (20)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (398)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 904  
 Glu Ala Leu Gly Gly Arg Cys Leu Trp Glu Xaa Pro Val Thr Phe Thr  
     1                    5                    10                    15  
 Val His Phe Xaa Asp Asn Ser Gly Asp Val Phe His Ala His Ser Ser  
           20                    25                    30  
 Val Leu Asn Phe Ala Thr Asn Arg Asp Asp Phe Val Gln Ile Gly Lys  
           35                    40                    45  
 Gly Pro Thr Asn Asn Thr Cys Val Val Arg Thr Val Ser Val Gly Leu  
     50                    55                    60  
 Thr Leu Leu Arg Val Trp Asp Ala Glu His Pro Gly Leu Ser Asp Phe  
     65                    70                    75                    80  
 Met Pro Leu Pro Val Leu Gln Ala Ile Ser Pro Glu Leu Ser Gly Ala  
           85                    90                    95  
 Met Val Val Gly Asp Val Leu Cys Leu Ala Thr Val Leu Thr Ser Leu  
          100                    105                    110  
 Glu Gly Leu Ser Gly Thr Trp Ser Ser Ser Ala Asn Ser Ile Leu His  
     115                    120                    125  
 Ile Asp Pro Lys Thr Gly Val Ala Val Ala Arg Ala Val Gly Ser Val  
     130                    135                    140  
 Thr Val Tyr Tyr Glu Val Ala Gly His Leu Arg Thr Tyr Lys Glu Val  
     145                    150                    155                    160  
 Val Val Ser Val Pro Gln Arg Ile Met Ala Arg His Leu His Pro Ile  
          165                    170                    175  
 Gln Thr Ser Phe Gln Glu Ala Thr Ala Ser Lys Val Ile Val Ala Val  
     180                    185                    190

Gly Asp Arg Ser Ser Asn Leu Arg Gly Glu Cys Thr Pro Thr Gln Arg  
 195 200 205  
 Glu Val Ile Gln Ala Leu His Pro Glu Thr Leu Ile Ser Cys Gln Ser  
 210 215 220  
 Gln Phe Lys Pro Ala Val Phe Asp Phe Pro Ser Gln Asp Val Phe Thr  
 225 230 235 240  
 Val Glu Pro Gln Phe Asp Thr Ala Leu Gly Gln Tyr Phe Cys Ser Ile  
 245 250 255  
 Thr Met His Arg Leu Thr Asp Lys Gln Arg Lys His Leu Ser Met Lys  
 260 265 270  
 Lys Thr Ala Leu Val Val Ser Ala Ser Leu Ser Ser Ser His Phe Ser  
 275 280 285  
 Thr Glu Gln Val Gly Ala Glu Val Pro Phe Ser Pro Gly Leu Phe Ala  
 290 295 300  
 Asp Gln Ala Glu Ile Leu Leu Ser Asn His Tyr Thr Ser Ser Glu Ile  
 305 310 315 320  
 Arg Val Phe Gly Ala Pro Glu Val Leu Glu Asn Leu Glu Val Lys Ser  
 325 330 335  
 Gly Ser Pro Ala Val Leu Ala Phe Ala Lys Glu Lys Ser Phe Gly Trp  
 340 345 350  
 Pro Ser Phe Ile Thr Tyr Thr Val Gly Val Leu Asp Pro Ala Ala Gly  
 355 360 365  
 Ser Gln Gly Pro Leu Ser Thr Thr Leu Thr Phe Ser Ser Pro Val Thr  
 370 375 380  
 Asn Gln Ala Ile Ala Ile Pro Val Thr Val Ala Phe Val Xaa Asp Arg  
 385 390 395 400  
 Arg Gly Pro Gly Pro Tyr Gly Ala Ser Leu Phe Gln His Phe Leu Asp  
 405 410 415  
 Ser Tyr Gln Val Met Phe Phe Thr Leu Phe Ala Leu Leu Ala Gly Thr  
 420 425 430  
 Ala Val Met Ile Ile Ala Tyr His Thr Val Cys Thr Pro Arg Asp Leu  
 435 440 445  
 Ala Val Pro Ala Ala Leu Thr Pro Arg Ala Ser Pro Gly His Ser Pro  
 450 455 460  
 His Tyr Phe Ala Ala Ser Ser Pro Thr Ser Pro Asn Ala Leu Pro Pro  
 465 470 475 480  
 Ala Arg Lys Ala Ser Pro Pro Ser Gly Leu Trp Ser Pro Ala Tyr Ala  
 485 490 495  
 Ser His

<210> 905  
 <211> 886  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (26)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (216)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (234)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (275)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (871)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 905  
 Met Ala Ala Arg Gly Arg Gly Leu Leu Leu Leu Thr Leu Ser Val Leu  
           1                          5                          10                          15  
 Leu Ala Ala Gly Pro Ser Ala Ala Ala Xaa Lys Leu Asn Ile Pro Lys  
                           20                          25                          30  
 Val Leu Leu Pro Phe Thr Arg Ala Thr Arg Val Asn Phe Thr Leu Glu  
                           35                          40                          45  
 Ala Ser Glu Gly Cys Tyr Arg Trp Leu Ser Thr Arg Pro Glu Val Ala  
           50                          55                          60  
 Ser Ile Glu Pro Leu Gly Leu Asp Glu Gln Gln Cys Ser Gln Lys Ala  
           65                          70                          75                          80  
 Val Val Gln Ala Arg Leu Thr Gln Pro Ala Arg Leu Thr Ser Ile Ile  
                           85                          90                          95  
 Phe Ala Glu Asp Ile Thr Thr Gly Gln Val Leu Arg Cys Asp Ala Ile  
                           100                          105                          110  
 Val Asp Leu Ile His Asp Ile Gln Ile Val Ser Thr Thr Arg Glu Leu  
           115                          120                          125  
 Tyr Leu Glu Asp Ser Pro Leu Glu Leu Lys Ile Gln Ala Leu Asp Ser  
           130                          135                          140

Glu Gly Asn Thr Phe Ser Thr Leu Ala Gly Leu Val Phe Glu Trp Thr  
 145 150 155 160  
 Ile Val Lys Asp Ser Glu Ala Asp Arg Phe Ser Asp Ser His Asn Ala  
 165 170 175  
 Leu Arg Ile Leu Thr Phe Leu Glu Ser Thr Tyr Ile Pro Pro Ser Tyr  
 180 185 190  
 Ile Ser Glu Met Glu Lys Ala Ala Lys Gln Gly Asp Thr Ile Leu Val  
 195 200 205  
 Ser Gly Met Lys Thr Gly Ser Xaa Lys Leu Lys Ala Arg Ile Gln Glu  
 210 215 220  
 Ala Val Tyr Lys Asn Val Arg Pro Ala Xaa Val Arg Leu Leu Ile Leu  
 225 230 235 240  
 Glu Asn Ile Leu Leu Asn Pro Ala Tyr Asp Val Tyr Leu Met Val Gly  
 245 250 255  
 Thr Ser Ile His Tyr Lys Val Gln Lys Ile Arg Gln Gly Lys Ile Thr  
 260 265 270  
 Glu Leu Xaa Met Pro Ser Asp Gln Tyr Glu Leu Gln Leu Gln Asn Ser  
 275 280 285  
 Ile Pro Gly Pro Glu Gly Asp Pro Thr Arg Pro Val Ala Val Leu Ala  
 290 295 300  
 Gln Asp Thr Ser Met Val Thr Ala Leu Gln Leu Gly Gln Ser Ser Leu  
 305 310 315 320  
 Val Leu Gly His Arg Ser Ile Arg Met Gln Gly Ala Ser Arg Leu Pro  
 325 330 335  
 Asn Ser Thr Ile Tyr Val Val Glu Pro Gly Tyr Leu Gly Phe Thr Val  
 340 345 350  
 His Pro Gly Asp Arg Trp Val Leu Glu Thr Gly Arg Leu Tyr Glu Ile  
 355 360 365  
 Thr Ile Glu Val Phe Asp Lys Phe Ser Asn Lys Val Tyr Val Ser Asp  
 370 375 380  
 Asn Ile Arg Ile Glu Thr Val Leu Pro Ala Glu Phe Phe Glu Val Leu  
 385 390 395 400  
 Ser Ser Ser Gln Asn Gly Ser Tyr His Arg Ile Arg Ala Leu Lys Arg  
 405 410 415  
 Gly Gln Thr Ala Ile Asp Ala Ala Leu Thr Ser Val Val Asp Gln Asp  
 420 425 430  
 Gly Gly Val His Ile Leu Gln Val Pro Val Trp Asn Gln Gln Glu Val  
 435 440 445  
 Glu Ile His Ile Pro Ile Thr Leu Tyr Pro Ser Ile Leu Thr Phe Pro  
 450 455 460

Trp Gln Pro Lys Thr Gly Ala Tyr Gln Tyr Thr Ile Arg Ala His Gly  
 465 470 475 480  
 Gly Ser Gly Asn Phe Ser Trp Ser Ser Ser Ser His Leu Val Ala Thr  
 485 490 495  
 Val Thr Val Lys Gly Val Met Thr Thr Gly Ser Asp Ile Gly Phe Ser  
 500 505 510  
 Val Ile Gln Ala His Asp Val Gln Asn Pro Leu His Phe Gly Glu Met  
 515 520 525  
 Lys Val Tyr Val Ile Glu Pro His Ser Met Glu Phe Ala Pro Cys Gln  
 530 535 540  
 Val Glu Ala Arg Val Gly Gln Ala Leu Glu Leu Pro Leu Arg Ile Ser  
 545 550 555 560  
 Gly Leu Met Pro Gly Gly Ala Ser Glu Val Val Thr Leu Ser Asp Cys  
 565 570 575  
 Ser His Phe Asp Leu Ala Val Glu Val Glu Asn Gln Gly Val Phe Gln  
 580 585 590  
 Pro Leu Pro Gly Arg Leu Pro Pro Gly Ser Glu His Cys Ser Gly Val  
 595 600 605  
 Arg Val Lys Ala Glu Ala Gln Gly Ser Thr Thr Leu Leu Val Ser Tyr  
 610 615 620  
 Arg His Gly His Val His Leu Ser Ala Lys Ile Thr Ile Ala Ala Tyr  
 625 630 635 640  
 Leu Pro Leu Lys Ala Val Asp Pro Ser Ser Val Ala Leu Val Thr Leu  
 645 650 655  
 Gly Ser Ser Lys Glu Met Leu Phe Glu Gly Gly Pro Arg Pro Trp Ile  
 660 665 670  
 Leu Glu Pro Ser Lys Phe Phe Gln Asn Val Thr Ala Glu Asp Thr Asp  
 675 680 685  
 Ser Ile Gly Leu Ala Leu Phe Ala Pro His Ser Ser Arg Asn Tyr Gln  
 690 695 700  
 Gln His Trp Ile Leu Val Thr Cys Gln Ala Leu Gly Glu Gln Val Ile  
 705 710 715 720  
 Ala Leu Ser Val Gly Asn Lys Pro Ser Leu Thr Asn Pro Phe Pro Ala  
 725 730 735  
 Val Glu Pro Ala Val Val Lys Phe Val Cys Ala Pro Pro Ser Arg Leu  
 740 745 750  
 Thr Leu Val Pro Val Tyr Thr Ser Pro Gln Leu Asp Met Ser Cys Pro  
 755 760 765  
 Leu Leu Gln Gln Asn Lys Gln Val Val Pro Val Ser Ser His Arg Asn  
 770 775 780



Pro Leu Leu Asp Leu Ala Ala Tyr Asp Gln Glu Gly Arg Arg Phe Asp  
 785 790 795 800

Asn Phe Ser Ser Leu Ser Ile Gln Trp Glu Ser Thr Arg Pro Val Leu  
 805 810 815

Ala Ser Ile Glu Pro Glu Leu Pro Met Gln Leu Val Ser Gln Asp Asp  
 820 825 830

Glu Ser Gly Gln Lys Lys Leu His Gly Leu Gln Ala Ile Leu Val His  
 835 840 845

Glu Ala Ser Gly Thr Thr Ala Ser Leu Pro Leu Pro Leu Ala Thr Arg  
 850 855 860

Ser Pro Thr Ser Ala Leu Xaa Glu Gln Ser Ser Arg Met Thr Leu Trp  
 865 870 875 880

Cys Leu Cys Arg Pro Pro  
 885

<210> 906  
 <211> 1887  
 <212> PRT  
 <213> Homo sapiens

<400> 906  
 Met Ala Ala Arg Gly Arg Gly Leu Leu Leu Leu Thr Leu Ser Val Leu  
 1 5 10 15

Leu Ala Ala Gly Pro Ser Ala Ala Ala Ala Lys Leu Asn Ile Pro Lys  
 20 25 30

Val Leu Leu Pro Phe Thr Arg Ala Thr Arg Val Asn Phe Thr Leu Glu  
 35 40 45

Ala Ser Glu Gly Cys Tyr Arg Trp Leu Ser Thr Arg Pro Glu Val Ala  
 50 55 60

Ser Ile Glu Pro Leu Gly Leu Asp Glu Gln Gln Cys Ser Gln Lys Ala  
 65 70 75 80

Val Val Gln Ala Arg Leu Thr Gln Pro Ala Arg Leu Thr Ser Ile Ile  
 85 90 95

Phe Ala Glu Asp Ile Thr Thr Gly Gln Val Leu Arg Cys Asp Ala Ile  
 100 105 110

Val Asp Leu Ile His Asp Ile Gln Ile Val Ser Thr Thr Arg Glu Leu  
 115 120 125

Tyr Leu Glu Asp Ser Pro Leu Glu Leu Lys Ile Gln Ala Leu Asp Ser  
 130 135 140

Glu Gly Asn Thr Phe Ser Thr Leu Ala Gly Leu Val Phe Glu Trp Thr  
 145 150 155 160

Ile Val Lys Asp Ser Glu Ala Asp Arg Phe Ser Asp Ser His Asn Ala

165							170					175				
Leu	Arg	Ile	Leu	Thr	Phe	Leu	Glu	Ser	Thr	Tyr	Ile	Pro	Pro	Ser	Tyr	
			180					185					190			
Ile	Ser	Glu	Met	Glu	Lys	Ala	Ala	Lys	Gln	Gly	Asp	Thr	Ile	Leu	Val	
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Ser	Gly	Met	Lys	Thr	Gly	Ser	Ser	Lys	Leu	Lys	Ala	Arg	Ile	Gln	Glu	
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Ala	Val	Tyr	Lys	Asn	Val	Arg	Pro	Ala	Glu	Val	Arg	Leu	Leu	Ile	Leu	
225					230					235					240	
Glu	Asn	Ile	Leu	Leu	Asn	Pro	Ala	Tyr	Asp	Val	Tyr	Leu	Met	Val	Gly	
				245					250					255		
Thr	Ser	Ile	His	Tyr	Lys	Val	Gln	Lys	Ile	Arg	Gln	Gly	Lys	Ile	Thr	
			260					265					270			
Glu	Leu	Ser	Met	Pro	Ser	Asp	Gln	Tyr	Glu	Leu	Gln	Leu	Gln	Asn	Ser	
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	290					295					300					
Gln	Asp	Thr	Ser	Met	Val	Thr	Ala	Leu	Gln	Leu	Gly	Gln	Ser	Ser	Leu	
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Val	Leu	Gly	His	Arg	Ser	Ile	Arg	Met	Gln	Gly	Ala	Ser	Arg	Leu	Pro	
				325					330					335		
Asn	Ser	Thr	Ile	Tyr	Val	Val	Glu	Pro	Gly	Tyr	Leu	Gly	Phe	Thr	Val	
			340					345					350			
His	Pro	Gly	Asp	Arg	Trp	Val	Leu	Glu	Thr	Gly	Arg	Leu	Tyr	Glu	Ile	
		355					360					365				
Thr	Ile	Glu	Val	Phe	Asp	Lys	Phe	Ser	Asn	Lys	Val	Tyr	Val	Ser	Asp	
	370					375					380					
Asn	Ile	Arg	Ile	Glu	Thr	Val	Leu	Pro	Ala	Glu	Phe	Phe	Glu	Val	Leu	
385					390					395					400	
Ser	Ser	Ser	Gln	Asn	Gly	Ser	Tyr	His	Arg	Ile	Arg	Ala	Leu	Lys	Arg	
				405					410					415		
Gly	Gln	Thr	Ala	Ile	Asp	Ala	Ala	Leu	Thr	Ser	Val	Val	Asp	Gln	Asp	
			420					425					430			
Gly	Gly	Val	His	Ile	Leu	Gln	Val	Pro	Val	Trp	Asn	Gln	Gln	Glu	Val	
		435					440					445				
Glu	Ile	His	Ile	Pro	Ile	Thr	Leu	Tyr	Pro	Ser	Ile	Leu	Thr	Phe	Pro	
	450					455					460					
Trp	Gln	Pro	Lys	Thr	Gly	Ala	Tyr	Gln	Tyr	Thr	Ile	Arg	Ala	His	Gly	
465					470					475					480	
Gly	Ser	Gly	Asn	Phe	Ser	Trp	Ser	Ser	Ser	Ser	His	Leu	Val	Ala	Thr	

485										490					495				
Val	Thr	Val	Lys	Gly	Val	Met	Thr	Thr	Gly	Ser	Asp	Ile	Gly	Phe	Ser				
			500						505				510						
Val	Ile	Gln	Ala	His	Asp	Val	Gln	Asn	Pro	Leu	His	Phe	Gly	Glu	Met				
		515						520				525							
Lys	Val	Tyr	Val	Ile	Glu	Pro	His	Ser	Met	Glu	Phe	Ala	Pro	Cys	Gln				
	530					535					540								
Val	Glu	Ala	Arg	Val	Gly	Gln	Ala	Leu	Glu	Leu	Pro	Leu	Arg	Ile	Ser				
545					550					555					560				
Gly	Leu	Met	Pro	Gly	Gly	Ala	Ser	Glu	Val	Val	Thr	Leu	Ser	Asp	Cys				
				565					570					575					
Ser	His	Phe	Asp	Leu	Ala	Val	Glu	Val	Glu	Asn	Gln	Gly	Val	Phe	Gln				
			580					585					590						
Pro	Leu	Pro	Gly	Arg	Leu	Pro	Pro	Gly	Ser	Glu	His	Cys	Ser	Gly	Val				
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Arg	Val	Lys	Ala	Glu	Ala	Gln	Gly	Ser	Thr	Thr	Leu	Leu	Val	Ser	Tyr				
	610					615					620								
Arg	His	Gly	His	Val	His	Leu	Ser	Ala	Lys	Ile	Thr	Ile	Ala	Ala	Tyr				
625					630					635					640				
Leu	Pro	Leu	Lys	Ala	Val	Asp	Pro	Ser	Ser	Val	Ala	Leu	Val	Thr	Leu				
			645						650					655					
Gly	Ser	Ser	Lys	Glu	Met	Leu	Phe	Glu	Gly	Gly	Pro	Arg	Pro	Trp	Ile				
			660					665					670						
Leu	Glu	Pro	Ser	Lys	Phe	Phe	Gln	Asn	Val	Thr	Ala	Glu	Asp	Thr	Asp				
		675					680					685							
Ser	Ile	Gly	Leu	Ala	Leu	Phe	Ala	Pro	His	Ser	Ser	Arg	Asn	Tyr	Gln				
	690					695					700								
Gln	His	Trp	Ile	Leu	Val	Thr	Cys	Gln	Ala	Leu	Gly	Glu	Gln	Val	Ile				
705					710					715					720				
Ala	Leu	Ser	Val	Gly	Asn	Lys	Pro	Ser	Leu	Thr	Asn	Pro	Phe	Pro	Ala				
				725					730					735					
Val	Glu	Pro	Ala	Val	Val	Lys	Phe	Val	Cys	Ala	Pro	Pro	Ser	Arg	Leu				
			740					745					750						
Thr	Leu	Val	Pro	Val	Tyr	Thr	Ser	Pro	Gln	Leu	Asp	Met	Ser	Cys	Pro				
		755					760					765							
Leu	Leu	Gln	Gln	Asn	Lys	Gln	Val	Val	Pro	Val	Ser	Ser	His	Arg	Asn				
	770					775					780								
Pro	Leu	Leu	Asp	Leu	Ala	Ala	Tyr	Asp	Gln	Glu	Gly	Arg	Arg	Phe	Asp				
785					790					795					800				
Asn	Phe	Ser	Ser	Leu	Ser	Ile	Gln	Trp	Glu	Ser	Thr	Arg	Pro	Val	Leu				

805										810					815				
Ala	Ser	Ile	Glu	Pro	Glu	Leu	Pro	Met	Gln	Leu	Val	Ser	Gln	Asp	Asp				
			820					825					830						
Glu	Ser	Gly	Gln	Lys	Lys	Leu	His	Gly	Leu	Gln	Ala	Ile	Leu	Val	His				
		835					840					845							
Glu	Ala	Ser	Gly	Thr	Thr	Ala	Ile	Thr	Ala	Thr	Ala	Thr	Gly	Tyr	Gln				
	850					855						860							
Glu	Ser	His	Leu	Ser	Ser	Ala	Arg	Thr	Lys	Gln	Pro	His	Asp	Pro	Leu				
865				870						875					880				
Val	Pro	Leu	Ser	Ala	Ser	Ile	Glu	Leu	Ile	Leu	Val	Glu	Asp	Val	Arg				
			885						890				895						
Val	Ser	Pro	Glu	Glu	Val	Thr	Ile	Tyr	Asn	His	Pro	Gly	Ile	Gln	Ala				
			900					905					910						
Glu	Leu	Arg	Ile	Arg	Glu	Gly	Ser	Gly	Tyr	Phe	Phe	Leu	Asn	Thr	Ser				
	915						920					925							
Thr	Ala	Asp	Val	Val	Lys	Val	Ala	Tyr	Gln	Glu	Ala	Arg	Gly	Val	Ala				
	930					935						940							
Met	Val	His	Pro	Leu	Leu	Pro	Gly	Ser	Ser	Thr	Ile	Met	Ile	His	Asp				
945				950						955					960				
Leu	Cys	Leu	Val	Phe	Pro	Ala	Pro	Ala	Lys	Ala	Val	Val	Tyr	Val	Ser				
			965						970					975					
Asp	Ile	Gln	Glu	Leu	Tyr	Ile	Arg	Val	Val	Asp	Lys	Val	Glu	Ile	Gly				
		980					985					990							
Lys	Thr	Val	Lys	Ala	Tyr	Val	Arg	Val	Leu	Asp	Leu	His	Lys	Lys	Pro				
	995						1000					1005							
Phe	Leu	Ala	Lys	Tyr	Phe	Pro	Phe	Met	Asp	Leu	Lys	Leu	Arg	Ala	Ala				
	1010					1015					1020								
Ser	Pro	Ile	Ile	Thr	Leu	Val	Ala	Leu	Asp	Glu	Ala	Leu	Asp	Asn	Tyr				
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Thr	Ile	Thr	Phe	Leu	Ile	Arg	Gly	Val	Ala	Ile	Gly	Gln	Thr	Ser	Leu				
			1045					1050					1055						
Thr	Ala	Ser	Val	Thr	Asn	Lys	Ala	Gly	Gln	Arg	Ile	Asn	Ser	Ala	Pro				
		1060						1065				1070							
Gln	Gln	Ile	Glu	Val	Phe	Pro	Pro	Phe	Arg	Leu	Met	Pro	Arg	Lys	Val				
	1075						1080					1085							
Thr	Leu	Leu	Ile	Gly	Ala	Thr	Met	Gln	Val	Thr	Ser	Glu	Gly	Gly	Pro				
	1090					1095					1100								
Gln	Pro	Gln	Ser	Asn	Ile	Leu	Phe	Ser	Ile	Ser	Asn	Glu	Ser	Val	Ala				
1105					1110					1115				1120					
Leu	Val	Ser	Ala	Ala	Gly	Leu	Val	Gln	Gly	Leu	Ala	Ile	Gly	Asn	Gly				

1125										1130										1135									
Thr	Val	Ser	Gly	Leu	Val	Gln	Ala	Val	Asp	Ala	Glu	Thr	Gly	Lys	Val														
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Val	Ile	Ile	Ser	Gln	Asp	Leu	Val	Gln	Val	Glu	Val	Leu	Leu	Leu	Arg														
			1155					1160					1165																
Ala	Val	Arg	Ile	Arg	Ala	Pro	Ile	Met	Arg	Met	Arg	Thr	Gly	Thr	Gln														
			1170					1175					1180																
Met	Pro	Ile	Tyr	Val	Thr	Gly	Ile	Thr	Asn	His	Gln	Asn	Pro	Phe	Ser														
					1190								1195		1200														
Phe	Gly	Asn	Ala	Val	Pro	Gly	Leu	Thr	Phe	His	Trp	Ser	Val	Thr	Lys														
				1205					1210					1215															
Arg	Asp	Val	Leu	Asp	Leu	Arg	Gly	Arg	His	His	Glu	Ala	Ser	Ile	Arg														
			1220					1225					1230																
Leu	Pro	Ser	Gln	Tyr	Asn	Phe	Ala	Met	Asn	Val	Leu	Gly	Arg	Val	Lys														
			1235				1240						1245																
Gly	Arg	Thr	Gly	Leu	Arg	Val	Val	Val	Lys	Ala	Val	Asp	Pro	Thr	Ser														
			1250			1255						1260																	
Gly	Gln	Leu	Tyr	Gly	Leu	Ala	Arg	Glu	Leu	Ser	Asp	Glu	Ile	Gln	Val														
					1270							1275			1280														
Gln	Val	Phe	Glu	Lys	Leu	Gln	Leu	Leu	Asn	Pro	Glu	Ile	Glu	Ala	Glu														
				1285					1290					1295															
Gln	Ile	Leu	Met	Ser	Pro	Asn	Ser	Tyr	Ile	Lys	Leu	Gln	Thr	Asn	Arg														
			1300					1305					1310																
Asp	Gly	Ala	Ala	Ser	Leu	Ser	Tyr	Arg	Val	Leu	Asp	Gly	Pro	Glu	Lys														
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Val	Pro	Val	Val	His	Val	Asp	Glu	Lys	Gly	Phe	Leu	Ala	Ser	Gly	Ser														
					1330		1335					1340																	
Met	Ile	Gly	Thr	Ser	Thr	Ile	Gly	Val	Ile	Ala	Gln	Glu	Pro	Phe	Gly														
					1350							1355			1360														
Ala	Asn	Gln	Thr	Ile	Ile	Val	Ala	Val	Lys	Val	Ser	Pro	Val	Ser	T														

1445	1450	1455
Arg Val Trp Asp 1460	Ala Glu His Pro Gly 1465	Leu Ser Asp Phe Met Pro Leu 1470
Pro Val Leu Gln 1475	Ala Ile Ser Pro Glu 1480	Leu Ser Gly Ala Met Val Val 1485
Gly Asp Val Leu Cys 1490	Leu Ala Thr Val Leu Thr 1495	Ser Leu Glu Gly Leu 1500
Ser Gly Thr Trp Ser 1505	Ser Ser Ala Asn Ser 1510	Ile Leu His Ile Asp Pro 1515 1520
Lys Thr Gly Val Ala 1525	Val Ala Arg Ala Val 1530	Gly Ser Val Thr Val Tyr 1535
Tyr Glu Val Ala 1540	Gly His Leu Arg Thr 1545	Lys Glu Val Val Val Ser 1550
Val Pro Gln Arg 1555	Ile Met Ala Arg His 1560	Leu His Pro Ile Gln Thr Ser 1565
Phe Gln Glu Ala Thr 1570	Ala Ser Lys Val Ile 1575	Val Ala Val Gly Asp Arg 1580
Ser Ser Asn Leu Arg 1585	Gly Glu Cys Thr Pro 1590	Thr Gln Arg Glu Val Ile 1595 1600
Gln Ala Leu His Pro 1605	Glu Thr Leu Ile Ser 1610	Cys Gln Ser Gln Phe Lys 1615
Pro Ala Val Phe 1620	Asp Phe Pro Ser Gln 1625	Asp Val Phe Thr Val Glu Pro 1630
Gln Phe Asp Thr 1635	Ala Leu Gly Gln Tyr 1640	Phe Cys Ser Ile Thr Met His 1645
Arg Leu Thr Asp Lys 1650	Gln Arg Lys His Leu 1655	Ser Met Lys Lys Thr Ala 1660
Leu Val Val Ser Ala 1665	Ser Leu Ser Ser Ser 1670	His Phe Ser Thr Glu Gln 1675 1680
Val Gly Ala Glu Val 1685	Pro Phe Ser Pro Gly 1690	Leu Phe Ala Asp Gln Ala 1695
Glu Ile Leu Leu Ser 1700	Asn His Tyr Thr 1705	Ser Ser Glu Ile Arg Val Phe 1710
Gly Ala Pro Glu 1715	Val Leu Glu Asn Leu 1720	Glu Val Lys Ser Gly Ser Pro 1725
Ala Val Leu Ala Phe 1730	Ala Lys Glu Lys Ser 1735	Phe Gly Trp Pro Ser Phe 1740
Ile Thr Tyr Thr Val 1745	Gly Val Leu Asp Pro 1750	Ala Ala Gly Ser Gln Gly 1755 1760
Pro Leu Ser Thr Thr 1765	Leu Thr Phe Ser Ser 1770	Pro Val Thr Asn Gln Ala 1775

1765										1770										1775													
Ile	Ala	Ile	Pro	Val	Thr	Val	Ala	Phe	Val	Val	Asp	Arg	Arg	Gly	Pro																		
			1780					1785						1790																			
Gly	Pro	Tyr	Gly	Ala	Ser	Leu	Phe	Gln	His	Phe	Leu	Asp	Ser	Tyr	Gln																		
		1795					1800					1805																					
Val	Met	Phe	Phe	Thr	Leu	Phe	Ala	Leu	Leu	Ala	Gly	Thr	Ala	Val	Met																		
		1810				1815					1820																						
Ile	Ile	Ala	Tyr	His	Thr	Val	Cys	Thr	Pro	Arg	Asp	Leu	Ala	Val	Pro																		
1825					1830				1835					1840																			
Ala	Ala	Leu	Thr	Pro	Arg	Ala	Ser	Pro	Gly	His	Ser	Pro	His	Tyr	Phe																		
				1845					1850					1855																			
Ala	Ala	Ser	Ser	Pro	Thr	Ser	Pro	Asn	Ala	Leu	Pro	Pro	Ala	Arg	Lys																		
			1860					1865					1870																				
Ala	Ser	Pro	Pro	Ser	Gly	Leu	Trp	Ser	Pro	Ala	Tyr	Ala	Ser	His																			
		1875				1880					1885																						

<210> 907  
 <211> 16  
 <212> PRT  
 <213> Homo sapiens

<400> 907  
 Pro Leu Cys Leu Ala Leu Glu Leu Gly Trp Val Cys Leu Ser Ser Thr  
 1 5 10 15

<210> 908  
 <211> 302  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (262)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (279)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (294)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>

&lt;221&gt; SITE

&lt;222&gt; (295)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 908

Met Leu Leu Leu Trp Lys Asn Phe Met Tyr Arg Arg Arg Gln Pro Val  
 1 5 10 15

Gln Leu Leu Val Glu Leu Leu Trp Pro Leu Phe Leu Phe Phe Ile Leu  
 20 25 30

Val Ala Val Arg His Ser His Pro Pro Leu Glu His His Glu Cys His  
 35 40 45

Phe Pro Asn Lys Pro Leu Pro Ser Ala Gly Thr Val Pro Trp Leu Gln  
 50 55 60

Gly Leu Ile Cys Asn Val Asn Asn Thr Cys Phe Pro Gln Leu Thr Pro  
 65 70 75 80

Gly Glu Glu Pro Gly Arg Leu Ser Asn Phe Asn Asp Ser Leu Val Ser  
 85 90 95

Arg Leu Leu Ala Asp Ala Arg Thr Val Leu Gly Gly Ala Ser Ala His  
 100 105 110

Arg Thr Leu Ala Gly Leu Gly Lys Leu Ile Ala Thr Leu Arg Ala Ala  
 115 120 125

Arg Ser Thr Ala Gln Pro Gln Pro Thr Lys Gln Ser Pro Leu Glu Pro  
 130 135 140

Pro Met Leu Asp Val Ala Glu Leu Leu Thr Ser Leu Leu Arg Thr Glu  
 145 150 155 160

Ser Leu Gly Leu Ala Leu Gly Gln Ala Gln Glu Pro Leu His Ser Leu  
 165 170 175

Leu Glu Ala Ala Glu Asp Leu Ala Gln Glu Leu Leu Ala Leu Arg Ser  
 180 185 190

Leu Val Glu Leu Arg Ala Leu Leu Gln Arg Pro Arg Gly Thr Ser Gly  
 195 200 205

Pro Leu Glu Leu Leu Ser Glu Ala Leu Cys Ser Val Arg Gly Pro Ser  
 210 215 220

Ser Thr Val Gly Pro Ser Leu Asn Trp Tyr Glu Ala Ser Asp Leu Met  
 225 230 235 240

Glu Leu Val Gly Gln Glu Pro Glu Ser Ala Cys Arg Gln Gln Leu Ser  
 245 250 255

Pro Leu Leu Gly Ala Xaa Trp Ser Leu Asp Ser Thr Arg Cys Pro Leu  
 260 265 270

Val Trp Asn Ala Glu Ala Xaa Ser Ser Glu Val Leu Leu Thr Asp His  
 275 280 285

Phe Thr Glu Val Met Xaa Xaa Glu Arg Leu Gln Ser Tyr Leu



290

295

300

<210> 909  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<400> 909  
 Leu Pro Trp Leu Pro Phe Phe Phe Ser Cys Leu Val Ser Thr Leu Pro  
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 Ser Met Ser Val Ser Ala Phe Ser Leu Val Val Arg Gly Arg Arg Ala  
                   20                  25                  30  
 Phe Thr Ser Val Arg  
                   35

<210> 910  
 <211> 181  
 <212> PRT  
 <213> Homo sapiens

<220>  
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 <222> (80)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (151)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (162)  
 <223> Xaa equals any of the naturally occurring L-amino acids

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 Lys Asp Val Leu Leu Pro His Lys Pro Tyr Pro Glu Val Ser Gln Ser  
                   20                  25                  30  
 Glu Pro Ala Pro Leu Glu Thr Arg Gly Ile Pro Phe Ile Pro Met Ile  
                   35                  40                  45  
 Ser Pro Ser Pro Ser Gln Glu Glu Leu Gln Thr Thr Leu Glu Glu Thr  
                   50                  55                  60  
 Asp Gln Ser Thr Gln Glu Pro Phe Thr Thr Lys Ile Pro Arg Thr Xaa  
   65                  70                  75                  80  
 Glu Leu Ala Lys Thr Thr Gln Ala Pro His Arg Phe Tyr Thr Thr Val  
                   85                  90                  95

Arg Pro Arg Thr Ser Asp Lys Pro His Ile Arg Pro Val Leu Asn Arg  
 100 105 110  
 Thr Thr Thr Arg Pro Thr Arg Pro Lys Pro Ser Gly Met Pro Ser Gly  
 115 120 125  
 Asn Gly Val Gly Thr Gly Val Lys Gln Ala Pro Arg Pro Ser Gly Ala  
 130 135 140  
 Asp Arg Asn Val Ser Val Xaa Ser Thr His Pro Thr Lys Lys Pro Gly  
 145 150 155 160  
 Thr Xaa Arg Pro Pro Leu Pro Pro Ser Arg Arg Gly Arg Glu Phe Pro  
 165 170 175  
 Gly Arg Arg Ala His  
 180

<210> 911  
 <211> 161  
 <212> PRT  
 <213> Homo sapiens

<400> 911

Met Leu Ser Ser Leu Gly Cys Leu Leu Leu Cys Gly Ser Ile Thr Leu  
 1 5 10 15  
 Ala Leu Gly Asn Ala Gln Lys Leu Pro Lys Gly Lys Arg Pro Asn Leu  
 20 25 30  
 Lys Val His Ile Asn Thr Thr Ser Asp Ser Ile Leu Leu Lys Phe Leu  
 35 40 45  
 Arg Pro Ser Pro Asn Val Lys Leu Glu Gly Leu Leu Leu Gly Tyr Gly  
 50 55 60  
 Ser Asn Val Ser Pro Asn Gln Tyr Phe Pro Leu Pro Ala Glu Gly Lys  
 65 70 75 80  
 Phe Thr Glu Ala Ile Val Asp Ala Glu Pro Lys Tyr Leu Ile Val Val  
 85 90 95  
 Arg Pro Ala Pro Pro Pro Ser Gln Lys Lys Ser Cys Ser Gly Lys Thr  
 100 105 110  
 Arg Ser Arg Lys Pro Leu Gln Leu Val Val Gly Thr Leu Thr Pro Ser  
 115 120 125  
 Ser Val Phe Leu Ser Trp Gly Phe Leu Ile Asn Pro His His Asp Trp  
 130 135 140  
 Thr Leu Pro Ser His Cys Pro Asn Asp Arg Phe Tyr Thr Ile Arg Tyr  
 145 150 155 160  
 Arg

&lt;210&gt; 912

&lt;211&gt; 778

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 912

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Met Leu Ser Ser Leu Gly Cys Leu Leu Leu Cys Gly Ser Ile Thr Leu
 1          5          10          15

Ala Leu Gly Asn Ala Gln Lys Leu Pro Lys Gly Lys Arg Pro Asn Leu
 20          25          30

Lys Val His Ile Asn Thr Thr Ser Asp Ser Ile Leu Leu Lys Phe Leu
 35          40          45

Arg Pro Ser Pro Asn Val Lys Leu Glu Gly Leu Leu Leu Gly Tyr Gly
 50          55          60

Ser Asn Val Ser Pro Asn Gln Tyr Phe Pro Leu Pro Ala Glu Gly Lys
 65          70          75          80

Phe Thr Glu Ala Ile Val Asp Ala Glu Pro Lys Tyr Leu Ile Val Val
 85          90          95

Arg Pro Ala Pro Pro Pro Ser Gln Lys Lys Ser Cys Ser Gly Lys Thr
100          105          110

Arg Ser Arg Lys Pro Leu Gln Leu Val Val Gly Thr Leu Thr Pro Ser
115          120          125

Ser Val Phe Leu Ser Trp Gly Phe Leu Ile Asn Pro His His Asp Trp
130          135          140

Thr Leu Pro Ser His Cys Pro Asn Asp Arg Phe Tyr Thr Ile Arg Tyr
145          150          155          160

Arg Glu Lys Asp Lys Glu Lys Lys Trp Ile Phe Gln Ile Cys Pro Ala
165          170          175

Thr Glu Thr Ile Val Glu Asn Leu Lys Pro Asn Thr Val Tyr Glu Phe
180          185          190

Gly Val Lys Asp Asn Val Glu Gly Gly Ile Trp Ser Lys Ile Phe Asn
195          200          205

His Lys Thr Val Val Gly Ser Lys Lys Val Asn Gly Lys Ile Gln Ser
210          215          220

Thr Tyr Asp Gln Asp His Thr Val Pro Ala Tyr Val Pro Arg Lys Leu
225          230          235          240

Ile Pro Ile Thr Ile Ile Lys Gln Val Ile Gln Asn Val Thr His Lys
245          250          255

Asp Ser Ala Lys Ser Pro Glu Lys Ala Pro Leu Gly Gly Val Ile Leu
260          265          270

Val His Leu Ile Ile Pro Gly Leu Asn Glu Thr Thr Val Lys Leu Pro
275          280          285

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Ala Ser Leu Met Phe Glu Ile Ser Asp Ala Leu Lys Thr Gln Leu Ala  
 290 295 300  
 Lys Asn Glu Thr Leu Ala Leu Pro Ala Glu Ser Lys Thr Pro Glu Val  
 305 310 315 320  
 Glu Lys Ile Ser Ala Arg Pro Thr Thr Val Thr Pro Glu Thr Val Pro  
 325 330 335  
 Arg Ser Thr Lys Pro Thr Thr Ser Ser Ala Leu Asp Val Ser Glu Thr  
 340 345 350  
 Thr Leu Val Leu Ser Lys Arg Thr Pro Glu Thr Leu Gln Thr Ile Leu  
 355 360 365  
 Ile Pro Gln Phe Glu Leu Pro Leu Ser Thr Leu Ala Pro Lys Ser Leu  
 370 375 380  
 Pro Glu Phe Pro Glu Ala Lys Thr Pro Phe Pro Phe Glu Lys Pro Arg  
 385 390 395 400  
 Gly Thr Leu Ala Ser Ser Glu Lys Pro Trp Ile Val Pro Thr Ala Lys  
 405 410 415  
 Ile Ser Glu Asp Ser Lys Val Leu Gln Pro Gln Thr Ala Thr Tyr Asp  
 420 425 430  
 Val Phe Ser Ser Pro Thr Thr Ser Asp Glu Pro Glu Ile Ser Asp Ser  
 435 440 445  
 Tyr Thr Ala Thr Ser Asp Arg Ile Leu Asp Ser Ile Pro Pro Lys Thr  
 450 455 460  
 Ser Arg Thr Leu Glu Gln Pro Arg Ala Thr Leu Ala Pro Ser Glu Thr  
 465 470 475 480  
 Pro Phe Val Pro Gln Lys Leu Glu Ile Phe Thr Ser Pro Glu Met Gln  
 485 490 495  
 Pro Thr Thr Pro Ala Pro Gln Gln Thr Thr Ser Ile Pro Ser Thr Pro  
 500 505 510  
 Lys Arg Arg Pro Arg Pro Lys Pro Pro Arg Thr Lys Pro Glu Arg Thr  
 515 520 525  
 Thr Ser Ala Gly Thr Ile Thr Pro Lys Ile Ser Lys Ser Pro Glu Pro  
 530 535 540  
 Thr Trp Thr Thr Pro Ala Pro Gly Lys Thr Gln Phe Ile Ser Leu Lys  
 545 550 555 560  
 Pro Lys Ile Pro Leu Ser Pro Glu Val Thr His Thr Lys Pro Ala Pro  
 565 570 575  
 Lys Gln Thr Pro Arg Ala Pro Pro Lys Pro Lys Thr Ser Pro Arg Pro  
 580 585 590  
 Arg Ile Pro Gln Thr Gln Pro Val Pro Lys Val Pro Gln Arg Val Thr  
 595 600 605

Ala Lys Pro Lys Thr Ser Pro Ser Pro Glu Val Ser Tyr Thr Thr Pro  
 610 615 620  
 Ala Pro Lys Asp Val Leu Leu Pro His Lys Pro Tyr Pro Glu Val Ser  
 625 630 635 640  
 Gln Ser Glu Pro Ala Pro Leu Glu Thr Arg Gly Ile Pro Phe Ile Pro  
 645 650 655  
 Met Ile Ser Pro Ser Pro Ser Gln Glu Glu Leu Gln Thr Thr Leu Glu  
 660 665 670  
 Glu Thr Asp Gln Ser Thr Gln Glu Pro Phe Thr Thr Lys Ile Pro Arg  
 675 680 685  
 Thr Thr Glu Leu Ala Lys Thr Thr Gln Ala Pro His Arg Phe Tyr Thr  
 690 695 700  
 Thr Val Arg Pro Arg Thr Ser Asp Lys Pro His Ile Arg Pro Val Leu  
 705 710 715 720  
 Asn Arg Thr Thr Thr Arg Pro Thr Arg Pro Lys Pro Ser Gly Met Pro  
 725 730 735  
 Ser Gly Asn Gly Val Gly Thr Gly Val Lys Gln Ala Pro Arg Pro Ser  
 740 745 750  
 Gly Ala Asp Arg Asn Val Ser Val Asp Ser Thr His Pro Thr Lys Lys  
 755 760 765  
 Pro Gly Thr Arg Arg Pro Pro Leu Pro Pro  
 770 775

<210> 913  
 <211> 132  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (70)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 913  
 Ser Phe Arg Thr Ala Pro Arg Gly Pro His Val Lys Glu Ser His Ala  
 1 5 10 15  
 Ser Gly Leu Leu Ser Asn Gln Ile Asn Leu Gln Ser Phe Asp Phe Lys  
 20 25 30  
 Arg Met Leu Leu Cys Arg Leu Asn Ile Thr Gly Leu Cys Trp Gly Pro  
 35 40 45  
 Lys Arg Thr Arg Cys Ala Leu Gly Gly Gln Thr Gly Leu Gln His His  
 50 55 60  
 Pro Ser Asn Glu Lys Xaa Arg His Ser Gly Lys Glu Asp Leu Phe Leu

65                      70                      75                      80

Ser Ile Cys Leu Gly Trp Gly Thr Thr Val Asn Met Ala Cys Asn Asn  
85                      90                      95

Gln Arg Gly Arg Gly Tyr Gln Thr Gln Arg Asn Ser Ser Pro Val Tyr  
100                      105                      110

Gln Glu Glu Leu Leu Phe Phe Cys Thr Ser Leu Phe Ser Arg Leu Phe  
115                      120                      125

Ser Leu Lys Gly  
130

<210> 914  
<211> 33  
<212> PRT  
<213> Homo sapiens

<400> 914  
Met Asn His Leu Ser Ile Ser Ile Ala Leu Phe Leu Leu Cys Cys Val  
1                      5                      10                      15

His Leu Ser Leu Gly Leu Ser Val Phe Pro Phe Gln Glu Asp Arg Ser  
20                      25                      30

Val

<210> 915  
<211> 102  
<212> PRT  
<213> Homo sapiens

<400> 915  
Met Asn Tyr Leu His Cys Asn Val Leu Leu Thr Leu Phe Cys Leu Leu  
1                      5                      10                      15

Phe Leu Leu His Ser Cys Ile Lys Ile Ile Lys His His Ser Gln Ala  
20                      25                      30

Lys Arg Thr Arg Phe Pro Ser His Ile Ser His Lys Gly Glu Ala Asn  
35                      40                      45

Thr His Gln Gly Gly Asn Tyr Thr Glu Leu Gly Trp Gly Leu Asp Ile  
50                      55                      60

Tyr Phe Thr Ser Glu Leu Phe Ile Ser Ala Val Asn Leu Gly Glu Gly  
65                      70                      75                      80

Leu Gly Glu Val Leu Ser Gly Glu Gln Arg Gly Pro Gly Gly Lys Leu  
85                      90                      95

Met Lys Thr Ser Asp Asp  
100

<210> 916  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 916  
 Ile Lys Thr Val Phe Leu Gly Gln Arg Tyr Thr Asp Pro Asn Phe Ile  
     1                    5                    10                    15  
 Ala Val Val Phe Ile His Leu Pro Ile Asp Ile Leu Lys Ala Pro Ala  
             20                    25                    30  
 Arg Pro Gly Thr Val Ala His Ala Cys Asn Leu Ser Thr Leu Val Gly  
             35                    40                    45  
 Arg Gly Gly Arg Ile Thr Arg Ser Arg Asp Gln Asp His Pro Gly Gln  
             50                    55                    60  
 Arg Gly Glu Thr Leu Ser Leu Leu Lys Ile Gln Lys Leu Ala Gly His  
             65                    70                    75                    80  
 Gly Gly Ala Arg Leu  
                     85

<210> 917  
 <211> 33  
 <212> PRT  
 <213> Homo sapiens

<400> 917  
 Met Ile Ser Cys Leu Cys Asn Phe Ile Ala His Cys Val Ala Leu Val  
     1                    5                    10                    15  
 Met Arg Thr Cys Met Leu Val Val Ser Ser Asn Phe Ala Pro Ser Phe  
             20                    25                    30  
 Leu

<210> 918  
 <211> 33  
 <212> PRT  
 <213> Homo sapiens

<400> 918  
 Met Ile Ser Cys Leu Cys Asn Phe Ile Ala His Cys Val Ala Leu Val  
     1                    5                    10                    15  
 Met Arg Thr Cys Met Leu Val Val Ser Ser Asn Phe Ala Pro Ser Phe  
             20                    25                    30  
 Leu

<210> 919  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

<400> 919  
 Val Asp Pro Arg Val Arg Thr Ser Ser Arg Ser Arg Ala Ala Ala Leu  
     1                    5                    10                    15  
 Phe Glu Cys Phe Leu Met Val Phe Leu Leu Lys Cys Gln Val Asn Asn  
             20                    25                    30  
 Phe Asn Pro Ile Gln Gln Tyr Ser Leu Phe Pro Leu Lys Ser Ser Gly  
             35                    40                    45  
 Thr Cys Ser Ile Ser Leu Phe Cys Met Arg Gly Leu Tyr Phe Cys Leu  
             50                    55                    60  
 Gly Val Val Ile Cys Thr His Ala Ile Leu Leu Lys Pro Ser Cys Leu  
     65                    70                    75                    80  
 Val Leu Phe Leu Glu Ser Phe Phe Phe Pro Val Leu Met Tyr Ala Gly  
             85                    90                    95  
 Phe Gly Asn Ser Ser  
             100

<210> 920  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 920  
 Met Arg Lys Trp Gly Leu Met Lys Leu Ile Ala Ser Met Met Gln Pro  
     1                    5                    10                    15  
 Val Leu Leu Glu Leu Leu Ser Val Trp Arg Lys Glu Gly Arg Asp Ser  
             20                    25                    30  
 Arg Asn Ile His Asp Ser His Ser Met Tyr Val Leu Arg Lys Arg Leu  
             35                    40                    45  
 Ser Gly Ser Trp Leu Gln Gln Val Cys Thr Leu Leu  
     50                    55                    60

<210> 921  
 <211> 79  
 <212> PRT  
 <213> Homo sapiens

<400> 921  
 Met Arg Lys Trp Gly Leu Met Lys Leu Ile Ala Ser Met Met Gln Pro  
     1                    5                    10                    15



Val Leu Leu Glu Leu Leu Ser Val Trp Arg Lys Glu Gly Arg Asp Ser  
                   20                  25                  30  
 Arg Asn Ile His Asp Ser His Ser Met Tyr Val Leu Arg Lys Arg Leu  
                   35                  40                  45  
 Ser Gly Ser Trp Leu Gln Ala Gly Leu Tyr Ser Thr Val Ile Ser Ala  
                   50                  55                  60  
 Ala Leu Ile Leu Glu Ser Pro Arg Ala Cys Leu Pro Ser Lys Gly  
                   65                  70                  75

<210> 922  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 922

Met Ala Asp Val Ser Ala Lys Asp Ser Ser Gln Glu Thr Leu Val Asn  
           1                  5                  10                  15  
 Leu Ala Gly Leu Leu Val Ser Leu Leu Met Leu Pro Leu Val Ser Gly  
                   20                  25                  30  
 Cys Pro Gly Phe Ser Leu Gly Cys Phe Phe Phe Leu Thr Ala Leu His  
                   35                  40                  45  
 Ile Tyr Ala Asn Tyr Arg Ala Val Arg Ala Leu Val Met Glu Thr Leu  
                   50                  55                  60  
 Asn Glu Gly Arg Leu Arg Leu Val Leu Lys His Tyr Leu Gln Arg Gly  
                   65                  70                  75                  80  
 Glu Val Leu Asp Pro Thr Ala Ala Asn Arg Met Glu Pro Leu Trp Thr  
                   85                  90                  95  
 Gly Phe Trp Pro Ala Pro Ser Leu Ser Leu Gly Val Pro Leu His Arg  
                   100                  105                  110  
 Leu Val Ser Ser Val Phe Glu Leu Gln Gln Leu Val Glu Gly His Gln  
                   115                  120                  125  
 Glu Ser Tyr Leu Leu Cys Trp Asp Gln Ser Gln Asn Gln Val Gln Val  
                   130                  135                  140  
 Val Leu Asn Gln Lys Ala Gly Pro Lys Thr Ile Leu Arg Ala Ala Thr  
                   145                  150                  155                  160  
 His Gly Leu Met Leu Gly Ala Leu Gln Gly Asp Gly Pro Leu Pro Ala  
                   165                  170                  175  
 Glu Leu Glu Glu Leu Arg Asn Arg Val Arg Ala Gly Pro Lys Lys Glu  
                   180                  185                  190  
 Ser Trp Val Val Val Lys Glu Thr His Glu Val Leu Asp Met Leu Phe  
                   195                  200                  205  
 Pro Lys Phe Leu Lys Gly Leu Gln Asp Ala Gly Trp Lys Thr Glu Lys

210                      215                      220  
 His Gln Leu Glu Val Asp Glu Trp Arg Ala Thr Trp Leu Leu Ser Pro  
 225                      230                      235                      240  
 Glu Lys Lys Val Leu  
                          245

<210> 923  
 <211> 75  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (62)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (63)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 923  
 Leu Pro Val Gln Asn Gly Cys Pro Glu Ser Ala Met Glu Met Asn Gly  
   1                      5                      10                      15  
 Arg Ala Pro Cys Trp Glu Val Gly Leu Glu Glu Leu Ser Ser Arg Lys  
                          20                      25                      30  
 Leu Thr Ala Gly Pro Gln Phe Pro Ser Glu Pro Gln Ala Pro Ala Pro  
                          35                      40                      45  
 Ser Leu Phe Arg Gln Cys Leu Leu Trp Phe Cys Gly Met Xaa Xaa Gly  
   50                      55                      60  
 Gly Val Gly Ser Pro Pro Pro Leu Thr Gln Glu  
   65                      70                      75

<210> 924  
 <211> 186  
 <212> PRT  
 <213> Homo sapiens

<400> 924  
 Met Leu Pro Leu Val Ser Gly Cys Pro Gly Phe Ser Leu Gly Cys Phe  
   1                      5                      10                      15  
 Phe Phe Leu Thr Ala Leu His Ile Tyr Ala Asn Tyr Arg Ala Val Arg  
                          20                      25                      30  
 Ala Leu Val Met Glu Thr Leu Asn Glu Gly Arg Leu Arg Leu Val Leu  
                          35                      40                      45  
 Lys His Tyr Leu Gln Arg Gly Glu Val Leu Asp Pro Thr Ala Ala Asn  
   50                      55                      60

Arg Met Glu Pro Leu Trp Thr Gly Phe Trp Pro Ala Pro Ser Leu Ser  
 65 70 75 80  
 Leu Gly Val Pro Leu His Arg Leu Val Ser Ser Val Phe Glu Leu Gln  
 85 90 95  
 Gln Leu Val Glu Gly His Gln Glu Ser Tyr Leu Leu Cys Trp Asp Gln  
 100 105 110  
 Ser Gln Asn Gln Val Gln Val Val Leu Asn Gln Lys Ala Gly Pro Lys  
 115 120 125  
 Thr Ile Leu Arg Ala Ala Thr His Gly Leu Met Leu Gly Ala Leu Gln  
 130 135 140  
 Gly Asp Gly Pro Leu Pro Ala Glu Leu Glu Glu Leu Arg Asn Arg Val  
 145 150 155 160  
 Arg Ala Gly Pro Arg Lys Arg Ala Gly Ser Ser Ser Arg Arg His Thr  
 165 170 175  
 Lys Cys Trp Thr Cys Cys Ser Gln Ser Ser  
 180 185

<210> 925  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<400> 925  
 Met Arg Arg Gln Thr Phe Met Ser Ile Leu Val Phe Gln Cys Ser Pro  
 1 5 10 15  
 Ile Ser Phe Gly Leu Cys Ile Asn Lys Glu Arg Thr Val Val Ser Ser  
 20 25 30  
 Val Ile Thr Asp Asn Leu Cys Leu  
 35 40

<210> 926  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<400> 926  
 Met Arg Arg Gln Thr Phe Met Ser Ile Leu Val Phe Gln Cys Ser Pro  
 1 5 10 15  
 Ile Ser Phe Gly Leu Cys Ile Asn Lys Glu Arg Thr Val Val Ser Ser  
 20 25 30  
 Val Ile Thr Asp Asn Leu Cys Leu  
 35 40

<210> 927  
<211> 73  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (60)  
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 927  
Ser Leu Leu Leu Ser Cys Cys Pro Leu Gly Asn Arg Ala Tyr Gly Ala  
1 5 10 15  
Thr Gly Ala Glu Val Ala Ser Arg Ala Ser Leu Glu Gly Ser Glu His  
20 25 30  
Ser Met Gln Arg Ser His Arg Glu Ala Gly Asn Gln Gly Pro Gly Arg  
35 40 45  
Ala Ala Ser Cys Ala Ser Pro Ala Phe Val Met Xaa Phe Ser Phe Phe  
50 55 60  
Thr His Cys Gln Ile Cys Phe Leu Pro  
65 70

<210> 928  
<211> 7  
<212> PRT  
<213> Homo sapiens

<400> 928  
Glu Ala Pro Trp Gln Phe Ser  
1 5

<210> 929  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 929  
Met Phe Leu Lys Ala Gln Trp Leu Tyr Ser Leu Leu Leu Asn Cys Leu  
1 5 10 15  
Leu Pro Glu Gly Thr Ser Ser  
20

<210> 930  
<211> 23  
<212> PRT  
<213> Homo sapiens

<400> 930

Met Phe Leu Lys Ala Gln Trp Leu Tyr Ser Leu Leu Leu Asn Cys Leu  
 1 5 10 15  
 Leu Pro Glu Gly Thr Ser Ser  
 20

<210> 931  
 <211> 64  
 <212> PRT  
 <213> Homo sapiens

<400> 931  
 Arg Thr Leu Arg Met Ser Pro Ser Ala Phe Cys Tyr Ser Leu Thr Leu  
 1 5 10 15  
 Leu Ala Cys Trp Arg Ala Ala Trp Ile Pro Thr Cys Val Pro Arg Ala  
 20 25 30  
 Ala Gly Glu Met Asp Ser Pro Gly Leu Ala Asp Gly His Trp Cys Ser  
 35 40 45  
 Gly Ala Ala Arg Arg Ser Pro His Tyr Val Ala Arg Ser Leu Val Leu  
 50 55 60

<210> 932  
 <211> 822  
 <212> PRT  
 <213> Homo sapiens

<400> 932  
 Met Ala Ala Ala Val Val Val Ala Glu Gly Asp Ser Asp Ser Arg Pro  
 1 5 10 15  
 Gly Gln Glu Leu Leu Val Ala Trp Asn Thr Val Ser Thr Gly Leu Val  
 20 25 30  
 Pro Pro Ala Ala Leu Gly Leu Val Ser Ser Arg Thr Ser Gly Ala Val  
 35 40 45  
 Pro Pro Lys Glu Glu Glu Leu Arg Ala Ala Val Glu Val Leu Arg Gly  
 50 55 60  
 His Gly Leu His Ser Val Leu Glu Glu Trp Phe Val Glu Val Leu Gln  
 65 70 75 80  
 Asn Asp Leu Gln Ala Asn Ile Ser Pro Glu Phe Trp Asn Ala Ile Ser  
 85 90 95  
 Gln Cys Glu Asn Ser Ala Asp Glu Pro Gln Cys Leu Leu Leu Leu Leu  
 100 105 110  
 Asp Ala Phe Gly Leu Leu Glu Ser Arg Leu Asp Pro Tyr Leu Arg Ser  
 115 120 125

Leu Glu Leu Leu Glu Lys Trp Thr Arg Leu Gly Leu Leu Met Gly Thr  
 130 135 140  
 Gly Ala Gln Gly Leu Arg Glu Glu Val His Thr Met Leu Arg Gly Val  
 145 150 155 160  
 Leu Phe Phe Ser Thr Pro Arg Thr Phe Gln Glu Met Ile Gln Arg Leu  
 165 170 175  
 Tyr Gly Cys Phe Leu Arg Val Tyr Met Gln Ser Lys Arg Lys Gly Glu  
 180 185 190  
 Gly Gly Thr Asp Pro Glu Leu Glu Gly Glu Leu Asp Ser Arg Tyr Ala  
 195 200 205  
 Arg Arg Arg Tyr Tyr Arg Leu Leu Gln Ser Pro Leu Cys Ala Gly Cys  
 210 215 220  
 Ser Ser Asp Lys Gln Gln Cys Trp Cys Arg Gln Ala Leu Glu Gln Phe  
 225 230 235 240  
 His Gln Leu Ser Gln Val Leu His Arg Leu Ser Leu Leu Glu Arg Val  
 245 250 255  
 Ser Ala Glu Ala Val Thr Thr Thr Leu His Gln Val Thr Arg Glu Arg  
 260 265 270  
 Met Glu Asp Arg Cys Arg Gly Glu Tyr Glu Arg Ser Phe Leu Arg Glu  
 275 280 285  
 Phe His Lys Trp Ile Glu Arg Val Val Gly Trp Leu Gly Lys Val Phe  
 290 295 300  
 Leu Gln Asp Gly Pro Ala Arg Pro Ala Ser Pro Glu Ala Gly Asn Thr  
 305 310 315 320  
 Leu Arg Arg Trp Arg Cys His Val Gln Arg Phe Phe Tyr Arg Ile Tyr  
 325 330 335  
 Ala Ser Leu Arg Ile Glu Glu Leu Phe Ser Ile Val Arg Asp Phe Pro  
 340 345 350  
 Asp Ser Arg Pro Ala Ile Glu Asp Leu Lys Tyr Cys Leu Glu Arg Thr  
 355 360 365  
 Asp Gln Arg Gln Gln Leu Leu Val Ser Leu Lys Ala Ala Leu Glu Thr  
 370 375 380  
 Arg Leu Leu His Pro Gly Val Asn Thr Cys Asp Ile Ile Thr Leu Tyr  
 385 390 395 400  
 Ile Ser Ala Ile Lys Ala Leu Arg Val Leu Asp Pro Ser Met Val Ile  
 405 410 415  
 Leu Glu Val Ala Cys Glu Pro Ile Arg Arg Tyr Leu Arg Thr Arg Glu  
 420 425 430  
 Asp Thr Val Arg Gln Ile Val Ala Gly Leu Thr Gly Asp Ser Asp Gly  
 435 440 445

Thr Gly Asp Leu Ala Val Glu Leu Ser Lys Thr Asp Pro Ala Ser Leu  
 450 455 460  
 Glu Thr Gly Gln Asp Ser Glu Asp Asp Ser Gly Glu Pro Glu Asp Trp  
 465 470 475 480  
 Val Pro Asp Pro Val Asp Ala Asp Pro Gly Lys Ser Ser Ser Lys Arg  
 485 490 495  
 Arg Ser Ser Asp Ile Ile Ser Leu Leu Val Ser Ile Tyr Gly Ser Lys  
 500 505 510  
 Asp Leu Phe Ile Asn Glu Tyr Arg Ser Leu Leu Ala Asp Arg Leu Leu  
 515 520 525  
 His Gln Phe Ser Phe Ser Pro Glu Arg Glu Ile Arg Asn Val Glu Leu  
 530 535 540  
 Leu Lys Leu Arg Phe Gly Glu Ala Pro Met His Phe Cys Glu Val Met  
 545 550 555 560  
 Leu Lys Asp Met Ala Asp Ser Arg Arg Ile Asn Ala Asn Ile Arg Glu  
 565 570 575  
 Glu Asp Glu Lys Arg Pro Ala Glu Glu Gln Pro Pro Phe Gly Val Tyr  
 580 585 590  
 Ala Val Ile Leu Ser Ser Glu Phe Trp Pro Pro Phe Lys Asp Glu Lys  
 595 600 605  
 Leu Glu Val Pro Glu Asp Ile Arg Ala Ala Leu Glu Ala Tyr Cys Lys  
 610 615 620  
 Lys Tyr Glu Gln Leu Lys Ala Met Arg Thr Leu Ser Trp Lys His Thr  
 625 630 635 640  
 Leu Gly Leu Val Thr Met Asp Val Glu Leu Ala Asp Arg Thr Leu Ser  
 645 650 655  
 Val Ala Val Thr Pro Val Gln Ala Val Ile Leu Leu Tyr Phe Gln Asp  
 660 665 670  
 Gln Ala Ser Trp Thr Leu Glu Glu Leu Ser Lys Ala Val Lys Met Pro  
 675 680 685  
 Val Ala Leu Leu Arg Arg Arg Met Ser Val Trp Leu Gln Gln Gly Val  
 690 695 700  
 Leu Arg Glu Glu Pro Pro Gly Thr Phe Ser Val Ile Glu Glu Glu Arg  
 705 710 715 720  
 Pro Gln Asp Arg Asp Asn Met Val Leu Ile Asp Ser Asp Asp Glu Ser  
 725 730 735  
 Asp Ser Gly Met Ala Ser Gln Ala Asp Gln Lys Glu Glu Glu Leu Leu  
 740 745 750  
 Leu Phe Trp Thr Tyr Ile Gln Ala Met Leu Thr Asn Leu Glu Ser Leu  
 755 760 765

Ser Leu Asp Arg Ile Tyr Asn Met Leu Arg Met Phe Val Val Thr Gly  
770 775 780

Pro Ala Leu Ala Glu Ile Asp Leu Gln Glu Leu Gln Gly Tyr Leu Gln  
785 790 795 800

Lys Lys Val Arg Asp Gln Gln Leu Val Tyr Ser Ala Gly Val Tyr Arg  
805 810 815

Leu Pro Lys Asn Cys Ser  
820

<210> 933

<211> 157

<212> PRT

<213> Homo sapiens

<400> 933

Met Ser Pro Trp Leu Leu Leu Leu Val Val Gly Ser Trp Leu Leu  
1 5 10 15

Ala Arg Ile Leu Ala Trp Thr Tyr Ala Phe Tyr Asn Asn Cys Arg Arg  
20 25 30

Leu Gln Cys Phe Pro Gln Pro Pro Lys Arg Asn Trp Phe Trp Gly His  
35 40 45

Leu Gly Leu Ile Thr Pro Thr Glu Glu Gly Leu Lys Asp Ser Thr Gln  
50 55 60

Met Ser Ala Thr Tyr Ser Gln Gly Phe Thr Val Trp Leu Gly Pro Ile  
65 70 75 80

Ile Pro Phe Ile Val Leu Cys His Pro Asp Thr Ile Arg Ser Ile Thr  
85 90 95

Asn Ala Ser Ala Ala Ile Ala Pro Lys Asp Asn Leu Phe Ile Arg Phe  
100 105 110

Leu Lys Pro Trp Leu Gly Glu Tyr Leu Gln Val Lys Gly Val Gly Asp  
115 120 125

Asn Leu Ala Gly Arg Val Gly Glu Val Leu Leu Leu Pro Ile Val Leu  
130 135 140

Gly Cys Pro Thr Arg Arg Arg Asp Thr Ala Glu Trp Arg  
145 150 155

<210> 934

<211> 13

<212> PRT

<213> Homo sapiens

<400> 934

Leu Val Ile Gly Gly Trp Gly Gln Arg Arg Leu Tyr Arg



1

5

10

<210> 935  
 <211> 126  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (119)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 935  
 Met Ser Pro Trp Leu Leu Leu Leu Val Val Gly Ser Trp Leu Leu  
           1                  5                  10                  15  
 Ala Arg Ile Leu Ala Trp Thr Tyr Ala Phe Tyr Asn Asn Cys Arg Arg  
                   20                  25                  30  
 Leu Gln Cys Phe Pro Gln Pro Pro Lys Arg Asn Trp Phe Trp Gly His  
                   35                  40                  45  
 Leu Gly Leu Ile Thr Pro Thr Glu Glu Gly Leu Lys Asp Ser Thr Gln  
           50                  55                  60  
 Met Ser Ala Thr Tyr Ser Gln Gly Phe Thr Val Trp Leu Gly Pro Ile  
           65                  70                  75                  80  
 Ile Pro Phe Ile Val Leu Cys His Pro Asp Thr Ile Arg Ser Ile Thr  
                   85                  90                  95  
 Asn Ala Ser Ala Ala Ile Ala Pro Lys Asp Asn Leu Phe Ile Arg Phe  
                   100                  105                  110  
 Leu Lys Pro Trp Leu Gly Xaa Arg Asp Thr Ala Glu Trp Arg  
           115                  120                  125

<210> 936  
 <211> 90  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (22)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (25)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (26)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 936

Gln Asn Thr Ile Glu Cys Gly Ser Ser Thr Ala Gly Val Cys Cys Ser  
 1 5 10 15

Gln Leu Trp Arg Leu Xaa Val Gln Xaa Xaa Gly Thr Gly Arg Leu His  
 20 25 30

Val Trp Trp Gly Pro Ala Ser Trp Ser Ile Ala Ser Thr Phe Ser Leu  
 35 40 45

His Pro Tyr Val Val Glu Glu Ala Gly Glu Leu Ser Gly Val Ser Phe  
 50 55 60

Val Thr Pro Phe Leu Arg Leu Val His Ser His Asp Leu Ile Thr Ser  
 65 70 75 80

Gln Arg Pro Cys Leu Leu Thr Pro Leu Pro  
 85 90

&lt;210&gt; 937

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 937

Met Lys Leu Thr Phe Ser Phe Pro Trp Phe Thr Leu Thr Ala Leu Gln  
 1 5 10 15

Leu Trp Ser Ala Thr Glu Cys Gln Ala Val Val Asp Thr Met Ile Ala  
 20 25 30

Val Trp Ser Glu Gly Lys Gly Thr Gly Val Ser Trp Glu Pro Trp Leu  
 35 40 45

Leu Gly Lys Leu Gln Ser Ser Ser Phe Leu  
 50 55

&lt;210&gt; 938

&lt;211&gt; 34

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 938

Leu Cys Val Ser His Pro Gly Ile Thr Cys Thr Pro Leu Trp Leu Cys  
 1 5 10 15

Val Ile Ser Gln Asn Met Glu Leu Ile Leu Met Phe Arg Arg Pro Lys  
 20 25 30

Leu Thr

&lt;210&gt; 939

<211> 6  
 <212> PRT  
 <213> Homo sapiens

<400> 939  
 Thr Leu Thr Ala Lys Thr  
 1 5

<210> 940  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 940  
 Met Lys Leu Thr Phe Ser Phe Pro Trp Phe Thr Leu Thr Ala Leu Gln  
 1 5 10 15  
 Leu Trp Ser Ala Thr Glu Cys Gln Ala Val Val Asp Thr Met Ile Ala  
 20 25 30  
 Val Trp Ser Glu Gly Lys Gly Thr Gly Val Ser Trp Glu Pro Trp Leu  
 35 40 45  
 Leu Gly Lys Leu Gln Ser Ser Ser Phe Leu  
 50 55

<210> 941  
 <211> 44  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 941  
 Leu Lys Xaa Ile Thr Ile Cys Cys Leu Gln Lys Thr His Leu His Ser  
 1 5 10 15  
 Lys Gly Thr Glu Arg Met Lys Val Lys Gly Trp Glu Arg Val Tyr Trp  
 20 25 30  
 Gly Asn Ile Thr Glu Gly Asn Met Met Asn Leu Tyr  
 35 40

<210> 942  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 942  
 Leu Gly Ala Phe Ser Trp Ser Pro Lys  
 1 5

<210> 943  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 943  
 Met Ala Arg Ser Leu Leu Ile Ile Leu Gly Ala Asp Phe Thr Phe Pro  
           1                  5                  10                  15  
 Thr Ser Phe Asn Cys Phe Gln Lys Met Asn Leu Ala Lys Lys Ser Arg  
                   20                  25                  30  
 Gly Ser Phe Thr His Leu Leu Thr His Ser Trp Cys Leu Ser Leu Phe  
                   35                  40                  45  
 Leu Lys Glu Ala Asp Gln Gly Leu Arg Glu Asn Asn Phe Asp Phe Ser  
           50                  55                  60  
 His Val Cys Pro Ser Lys Pro Pro Leu Trp Thr Asp Ser Pro Ser Val  
           65                  70                  75                  80  
 Pro Gly Arg Asn Trp Asp Asn Pro Arg Thr Phe Leu Val Pro Ser Arg  
                   85                  90                  95

<210> 944  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 944  
 Met Ala Arg Ser Leu Leu Ile Ile Leu Gly Ala Asp Phe Thr Phe Pro  
           1                  5                  10                  15  
 Thr Ser Phe Asn Cys Phe Gln Lys Met Asn Leu Ala Lys Lys Ser Arg  
                   20                  25                  30  
 Gly Ser Phe Thr His Leu Leu Thr His Ser Trp Cys Leu Ser Leu Phe  
                   35                  40                  45  
 Leu Lys Glu Ala Asp Gln Gly Leu Arg Glu Asn Asn Phe Asp Phe Ser  
           50                  55                  60  
 His Val Cys Pro Ser Lys Pro Pro Leu Trp Thr Asp Ser Pro Ser Val  
           65                  70                  75                  80  
 Pro Gly Arg Asn Trp Asp Asn Pro Arg Thr Phe Leu Val Pro Ser Arg  
                   85                  90                  95

<210> 945  
 <211> 26  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (5)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 945  
 Met Leu Xaa Phe Xaa Phe Phe Leu Leu Phe Phe Phe Phe Phe Trp Trp  
           1                  5                  10                  15  
 Cys Cys Leu Ala Phe Phe Ser Phe Pro Phe  
                   20                  25

<210> 946  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens

<400> 946  
 Met Leu Leu Phe Phe Phe Phe Leu Leu Phe Phe Phe Phe Phe Phe Trp  
           1                  5                  10                  15  
 Leu Val Leu Phe Gly Ile Phe Phe Phe Ser Phe Leu Lys Lys Met Phe  
                   20                  25                  30  
 Ser Gly Asn Met Asn Lys His Thr Ala Asn Tyr Ser Gly Ala Gly Lys  
                   35                  40                  45  
 Ala Gln Glu Leu Ala Thr Ser Gln Leu His Ser Trp Asp Gly Lys Pro  
           50                  55                  60  
 Cys Cys Glu Leu Leu Arg Leu Phe Thr Tyr Phe Thr Tyr  
           65                  70                  75

<210> 947  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens

<400> 947  
 Met Leu Leu Phe Phe Phe Phe Leu Leu Phe Phe Phe Phe Phe Trp  
           1                  5                  10                  15  
 Leu Val Leu Phe Gly Ile Phe Phe Phe Ser Phe Leu Lys Lys Met Phe  
                   20                  25                  30

Ser Gly Asn Met Asn Lys His Thr Ala Asn Tyr Ser Gly Ala Gly Lys  
35 40 45

Ala Gln Glu Leu Ala Thr Ser Gln Leu His Ser Trp Asp Gly Lys Pro  
50 55 60

Cys Cys Glu Leu Leu Arg Leu Phe Thr Tyr Phe Thr Tyr  
65 70 75

<210> 948

<211> 11

<212> PRT

<213> Homo sapiens

<400> 948

Met Trp Arg Trp Leu Ser Ser Phe Trp Leu Leu  
1 5 10

<210> 949

<211> 11

<212> PRT

<213> Homo sapiens

<400> 949

Met Trp Arg Trp Leu Ser Ser Phe Trp Leu Leu  
1 5 10

<210> 950

<211> 378

<212> PRT

<213> Homo sapiens

<400> 950

Ala Arg Glu Lys Pro Tyr Leu Val Glu Glu Ala Val Ser Tyr Asn Glu  
1 5 10 15

Leu Asp Tyr Val Ser Val Gly Leu Asp Gln Gln Thr Val Lys Leu Val  
20 25 30

Cys Thr Asn Arg Arg Lys Gln Phe Leu Leu Asp Thr Ala Asp Val Ala  
35 40 45

Leu Ala Glu Phe Phe Leu Ala Ser Leu Lys Ser Ala Met Ile Lys Gly  
50 55 60

Cys Arg Glu Pro Pro Tyr Pro Ser Ile Leu Thr Asp Ala Thr Met Glu  
65 70 75 80

Lys Leu Ala Leu Ala Lys Phe Val Ala Gln Glu Ser Lys Cys Glu Ala  
85 90 95

Ser Ala Val Thr Val Arg Phe Tyr Gly Leu Val His Trp Glu Asp Pro  
100 105 110

Thr Asp Glu Ser Leu Gly Pro Thr Pro Cys His Cys Ser Pro Pro Glu  
 115 120 125  
 Gly Thr Ile Thr Lys Glu Gly Met Leu His Tyr Lys Ala Gly Thr Ser  
 130 135 140  
 Tyr Leu Gly Lys Glu His Trp Lys Thr Cys Phe Val Val Leu Ser Asn  
 145 150 155 160  
 Gly Ile Leu Tyr Gln Tyr Pro Asp Arg Thr Asp Val Ile Pro Leu Leu  
 165 170 175  
 Ser Val Asn Met Gly Gly Glu Gln Cys Gly Gly Cys Arg Arg Ala Asn  
 180 185 190  
 Thr Thr Asp Arg Pro His Ala Phe Gln Val Ile Leu Ser Asp Arg Pro  
 195 200 205  
 Cys Leu Glu Leu Ser Ala Glu Ser Glu Ala Glu Met Ala Glu Trp Met  
 210 215 220  
 Gln His Leu Cys Gln Ala Val Ser Lys Gly Val Ile Pro Gln Gly Val  
 225 230 235 240  
 Ala Pro Ser Pro Cys Ile Pro Cys Cys Leu Val Leu Thr Asp Asp Arg  
 245 250 255  
 Leu Phe Thr Cys His Glu Asp Cys Gln Thr Ser Phe Phe Arg Ser Leu  
 260 265 270  
 Gly Thr Ala Lys Leu Gly Asp Ile Ser Ala Val Ser Thr Glu Pro Gly  
 275 280 285  
 Lys Glu Tyr Cys Val Leu Glu Phe Ser Gln Asp Ser Gln Gln Leu Leu  
 290 295 300  
 Pro Pro Trp Val Ile Tyr Leu Ser Cys Thr Ser Glu Leu Asp Arg Leu  
 305 310 315 320  
 Leu Ser Ala Leu Asn Ser Gly Trp Lys Thr Ile Tyr Gln Val Asp Leu  
 325 330 335  
 Pro His Thr Ala Ile Gln Glu Ala Ser Asn Lys Lys Lys Phe Glu Asp  
 340 345 350  
 Ala Leu Ser Leu Ile His Ser Ala Trp Gln Arg Ser Asp Ser Leu Cys  
 355 360 365  
 Arg Gly Arg Ala Ser Arg Asp Pro Trp Cys  
 370 375

&lt;210&gt; 951

&lt;211&gt; 134

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 951

Ser Pro Ala Arg His Pro Thr Thr Ser Ser Arg His Thr Trp Trp Glu

1	5	10	15
Ser Gly Asn Ala Val Pro Pro Gly Ser Pro Phe His Gly Arg Pro Leu	20	25	30
Leu Leu Leu Gln Pro Ala Gly Pro Val Pro Phe Gln Asp Gln Pro Phe	35	40	45
Asp Pro Ser Gln Gly Pro Trp Pro Gly Leu His Cys Arg Pro Gln Gly	50	55	60
Leu Met His Ser Met Cys Leu Pro Asp Leu Thr Pro Glu Asp Gly Gly	65	70	75
Lys Ala Gln Asp His Thr Ala Leu Gly His Ser Arg Glu Gln Asp Thr	85	90	95
Pro Gly Val Gln Glu Asn Phe Gln Gly Ala Ala Pro Leu Asp Arg Tyr	100	105	110
Thr Arg Arg Phe Asn Thr Leu Tyr Tyr Leu Gly Asn Gln Arg Arg Gly	115	120	125
Ile Ile Lys Thr Arg Lys	130		

<210> 952  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 952
Met Ala Thr Ala Ser Ile Asn Asn Leu Ile Ser Ser Leu Leu Leu His
1 5 10 15
Leu Ser Leu Leu Ser Ser Lys Ala Gly Lys Phe Leu Ile Trp Lys Glu
20 25 30
His Lys Thr Ala Cys Gly Cys Tyr Ala Asn Ser Thr Cys Leu Leu Pro
35 40 45
Asn Gly Leu Ser Asn His Lys Gly Lys Ser
50 55

<210> 953  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 953
Met Ala Thr Ala Ser Ile Asn Asn Leu Ile Ser Ser Leu Leu Leu His
1 5 10 15
Leu Ser Leu Leu Ser Ser Lys Ala Gly Lys Phe Leu Ile Trp Lys Glu
20 25 30



His Lys Thr Ala Cys Gly Cys Tyr Ala Asn Ser Thr Cys Leu Leu Pro  
35 40 45

Asn Gly Leu Ser Asn His Lys Gly Lys Ser  
50 55

<210> 954

<211> 63

<212> PRT

<213> Homo sapiens

<400> 954

Glu Asn Lys Arg Leu His Phe Gly Glu Ala Ser Thr Leu Ser Gly Leu  
1 5 10 15

Leu Phe Cys Phe Met Ser Trp Cys Leu Gly Glu Asp Leu Ala Gly Phe  
20 25 30

Ile Gln Ser Gly Arg Val Trp Ala Ile Leu Glu Asn Val Pro Ser Ile  
35 40 45

Ser Glu Asn Lys Ser Ala Pro Ser Thr Cys Leu His Pro Gly Asp  
50 55 60

<210> 955

<211> 77

<212> PRT

<213> Homo sapiens

<400> 955

Met Ala Gly Leu Gly Leu Leu Ser Leu Val Gln Phe Ser Val Thr Gly .  
1 5 10 15

Gly His Trp Thr Gly Ile Ala Asp Ser Leu Val Ala Thr Leu Gly Cys  
20 25 30

Arg Leu Ser Gly Ser Val Pro Pro Pro Leu Leu Pro Ala Pro Ser Gly  
35 40 45

His Ser Arg Ala Leu His Gln Thr Leu Thr Trp Cys Leu His Leu Leu  
50 55 60

Ser Leu Ser Pro Ser Ser Asn. Pro Trp Lys Ser Leu Val  
65 70 75

<210> 956

<211> 77

<212> PRT

<213> Homo sapiens

<400> 956

Met Ala Gly Leu Gly Leu Leu Ser Leu Val Gln Phe Ser Val Thr Gly  
1 5 10 15

Gly His Trp Thr Gly Ile Ala Asp Ser Leu Val Ala Thr Leu Gly Cys  
20 25 30

Arg Leu Ser Gly Ser Val Pro Pro Pro Leu Leu Pro Ala Pro Ser Gly  
35 40 45

His Ser Arg Ala Leu His Gln Thr Leu Thr Trp Cys Leu His Leu Leu  
50 55 60

Ser Leu Ser Pro Ser Ser Asn Pro Trp Lys Ser Leu Val  
65 70 75

<210> 957

<211> 27

<212> PRT

<213> Homo sapiens

<400> 957

Met Arg Ala Arg Thr Leu Pro Pro Ser Leu Leu Cys Leu Trp Cys Leu  
1 5 10 15

Ala Pro Tyr Leu Asn Ile Cys Trp Met Asn Gly  
20 25

<210> 958

<211> 28

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (14)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 958

Ala Gln Trp Leu Thr Pro Val Ile Pro Ala Leu Trp Trp Xaa Glu Glu  
1 5 10 15

Gly Gly Ser Pro Glu Val Arg Ser Ser Arg Pro Ala  
20 25

<210> 959

<211> 27

<212> PRT

<213> Homo sapiens

<400> 959

Met Arg Ala Arg Thr Leu Pro Pro Ser Leu Leu Cys Leu Trp Cys Leu  
1 5 10 15

Ala Pro Tyr Leu Asn Ile Cys Trp Met Asn Gly  
20 25

<210> 960  
 <211> 13  
 <212> PRT  
 <213> Homo sapiens

<400> 960  
 Pro Pro Arg Ala Ser Trp Ser Pro Arg Glu His Val Leu  
           1                  5                  10

<210> 961  
 <211> 70  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (2)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 961  
 Met Xaa Xaa His Glu Ser Ile Leu Leu Val Ser Leu Asp Leu Leu Pro  
           1                  5                  10                  15

Thr Ser Ile Leu Leu Val Ser Leu Trp Ile Cys Ser Pro Pro Pro Ser  
                   20                  25                  30

Ser Trp Val Asn Pro Gly Ser Phe Val Gly Tyr Leu Glu Arg Lys Arg  
                   35                  40                  45

Gln Lys Leu Ile Cys Gln Met Thr Arg Thr Asn Arg Leu Phe Gly Met  
           50                  55                  60

Lys Arg Lys Thr Ser Gly  
           65                  70

<210> 962  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (47)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 962  
 Ser Leu Ala Leu Asn Ser Pro Pro Pro Gly Leu Arg Val Pro Arg Glu  
           1                  5                  10                  15

Glu Arg Leu Leu Ala Thr Ser Leu Leu Gln Gly Ala Leu Pro Ala Gly

20 25 30

Pro Cys Pro Ser Thr Thr Leu Leu Ser Trp His Arg Pro Ala Xaa Pro  
 35 40 45

Pro Gly Ala Gln Gly  
 50

<210> 963  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<400> 963  
 Ser Ile Leu Leu Val Ser Leu Asp Leu Leu Pro Thr Ser Ile Leu Leu  
 1 5 10 15

Val Ser Leu Trp Ile Cys Ser Pro Pro Pro Ser Ser Trp Val Asn Pro  
 20 25 30

Gly Ser Phe Val Gly Tyr Leu Glu Arg Lys Arg Gln Lys Leu Ile Cys  
 35 40 45

Gln Met Thr Arg Thr Asn Arg Leu Phe Gly Met Lys Arg Lys Thr Ser  
 50 55 60

Gly  
 65

<210> 964  
 <211> 3  
 <212> PRT  
 <213> Homo sapiens

<400> 964  
 Asp Leu Lys  
 1

<210> 965  
 <211> 9  
 <212> PRT  
 <213> Homo sapiens

<400> 965  
 Met Asn Glu Lys Phe Leu Pro Pro Leu  
 1 5

<210> 966  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 966

Met Leu Arg Pro Pro Arg Trp Ala Leu Met Ala Ala Ser Ser His Pro  
 1 5 10 15

Pro Pro Leu Trp Ser Trp Val Leu Gly Leu Ala Ala His Pro Thr Gly  
 20 25 30

Met Ser Pro Gly Thr Gly Pro His His Gly Trp Val Ser Ala Ser Ser  
 35 40 45

Ser Ser Ser  
 50

&lt;210&gt; 967

&lt;211&gt; 244

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (25)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (40)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (41)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (43)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (231)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (237)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 967

Met Arg Ala Pro Phe Asn Thr Leu Phe Gly Arg Leu Phe Gly Leu Leu  
 1 5 10 15

Leu Val Ala Ile Val Leu Ala His Xaa Leu Ala Phe Phe Trp Phe His  
 20 25 30

His Tyr Gly Pro Pro Pro Pro Xaa Xaa Ala Xaa Phe Val Glu Gln Pro  
 35 40 45

Asp Gly Ser Leu Thr Pro Leu Arg Lys Ala Pro Arg Pro Trp Phe Gly  
 50 55 60  
 Gly Pro Val Val Pro Leu Thr Phe Gln Phe Ile Ser Leu Ile Ile Ala  
 65 70 75 80  
 Ala Trp Tyr Gly Ala Lys Leu Leu Ser Arg Pro Ile Gln Arg Leu Ser  
 85 90 95  
 Ala Ala Ala Glu Arg Leu Ser Val Asp Leu Asp Ser Pro Pro Leu Val  
 100 105 110  
 Glu Thr Gly Pro Arg Glu Ala Arg Gln Ala Ala Ser Thr Phe Asn Leu  
 115 120 125  
 Met Gln Lys Arg Ile Arg Glu Gln Val Ser Gln Arg Ala Arg Met Leu  
 130 135 140  
 Gly Ala Val Ser His Asp Leu Arg Thr Pro Leu Ser Arg Leu Lys Leu  
 145 150 155 160  
 Arg Leu Glu Gln Ile Glu Asp Pro Lys Leu Gln Gly Gln Met Arg Gln  
 165 170 175  
 Asp Leu Asp Asp Met Ile Gly Met Leu Asp Ala Thr Leu Ser Tyr Leu  
 180 185 190  
 His Glu Gln Arg Thr Ser Glu Thr Arg His Trp Leu Asp Val Gln Ala  
 195 200 205  
 Leu Val Glu Ser Leu Ser Glu Asn Ala Gln Asp Gln Gly Arg Asp Val  
 210 215 220  
 Gln Phe Phe Phe Gly Gly Xaa Pro Pro Gly Gly Gly Xaa Pro Lys Thr  
 225 230 235 240  
 Pro Pro Pro Phe

<210> 968  
 <211> 244  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (231)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (237)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 968  
 Met Arg Ala Pro Phe Asn Thr Leu Phe Gly Arg Leu Phe Gly Leu Leu  
 1 5 10 15

[illegible]

<210> 969

<211> 85

<212> PRT

<213> Homo sapiens

·<400> 969

Gly Ile Gly Ser Arg Val Arg Ala Ala Phe Ile Ala Leu Glu Pro Ser  
1 5 10 15

Leu Gly Met Gly Phe Ser Lys Asn Trp Gln Ala His Arg Leu Pro Ser  
20 25 30

Lys Trp Val Arg Thr Ala Tyr Pro Ser Ile Glu Thr His Tyr Leu Phe

35                      40                      45  
 Tyr Leu Phe Leu Ser Gly Ser Gly Ala Arg Cys Ser Tyr Phe Ser His  
     50                                      55                                      60  
 Leu Arg Trp Asp Ile Leu Gly Gln Thr Arg Glu Ile Leu Glu Ala Ile  
     65                                      70                                      75                                      80  
 Ser Val Val Asn Pro  
                                     85

<210> 970  
 <211> 54  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (34)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (35)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (46)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 970  
 Met Lys Thr Val Ser Leu Leu Leu Thr Leu Trp Phe Ser Gln Thr Phe  
     1                                      5                                      10                                      15  
 Ser Phe Asn Leu Phe Phe Ala Pro Pro His Ser Leu Leu Gln Ser Ser  
                                     20                                      25                                      30  
 Ile Xaa Xaa Ser Val Ser Ser Ile Thr Thr Val His Pro Xaa Leu Gly  
                                     35                                      40                                      45  
 Leu Leu Phe Cys Ile Leu  
     50

<210> 971  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<400> 971  
 Ile Leu Leu Gly Leu Trp Gln Ser Val Leu Gly Ser Ser Ile Trp Gly  
     1                                      5                                      10                                      15  
 Gln Pro Leu Ser Tyr Asn Cys Gln Glu Pro His Asn Cys Leu Phe Asn  
                                     20                                      25                                      30



His Ser Asp Phe Lys  
35

<210> 972  
<211> 56  
<212> PRT  
<213> Homo sapiens

<400> 972  
Met Lys Thr Val Ser Leu Leu Leu Thr Leu Trp Phe Ser Gln Thr Phe  
1 5 10 15  
Ser Phe Asn Leu Phe Phe Ala Pro Pro His Ser Leu Leu Gln Ser Ser  
20 25 30  
Ile Phe Phe Ser Val Ser Ser Ile Thr Thr Val His Pro Ile Leu Val  
35 40 45  
Phe Phe Phe Ala Phe Phe Arg Thr  
50 55

<210> 973  
<211> 65  
<212> PRT  
<213> Homo sapiens

<400> 973  
Lys Leu Thr Gln Ala Gly Ser Gly Tyr Val His Arg Glu Ile Phe Pro  
1 5 10 15  
Arg Val Cys Phe Phe Asp Ile Leu Ser Pro Ser Phe Tyr Leu Leu Ala  
20 25 30  
Gly Ile Ser Cys Pro Thr Thr Pro Val Ile Ile Cys Lys Pro Leu Tyr  
35 40 45  
Ser Phe Gln Cys Leu Lys Val Ile His Lys Glu Gly Arg Asn Lys Arg  
50 55 60  
Val  
65

<210> 974  
<211> 11  
<212> PRT  
<213> Homo sapiens

<400> 974  
Met Thr Leu Ser Asn Trp Glu Tyr Gly Phe His  
1 5 10

<210> 975

<211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 975

```
Met Pro Phe Tyr Tyr Ala Gly Leu Ile Leu Met Glu Met Arg Leu Thr
  1                      5                      10                      15

Ile Ala Lys Thr Pro Val Glu Thr Gln Gln Ser Trp Pro Ala Phe Leu
                20                      25                      30

Trp Tyr Phe Gly Cys Gly Ser Cys Asp Gly Tyr Ser Ile Lys His Cys
                35                      40                      45

Ile Ser Leu His Leu Leu Ser Phe Ser Leu Gln Lys
    50                      55                      60
```

<210> 976  
 <211> 24  
 <212> PRT  
 <213> Homo sapiens

<400> 976

```
Ile Cys Leu Trp Gly Arg Pro Asn Leu Thr Thr Gln Gly Thr Leu Lys
  1                      5                      10                      15

Gly Ile Ser Gly Arg Arg Ser Gln
    20
```

<210> 977  
 <211> 128  
 <212> PRT  
 <213> Homo sapiens

<400> 977

```
Pro Glu Thr Phe Leu Leu Val Thr Gly Ser Gln Trp Gly Ile Leu Gly
  1                      5                      10                      15

Cys Gln Gly Pro Arg Val Thr Cys Val Gln Leu Phe Tyr Gly Ser Arg
                20                      25                      30

Gly Leu Ser Leu Arg Gln Ala Thr Lys Cys Pro Gly Cys His Pro Pro
    35                      40                      45

Trp Ser Pro Ser Val Pro His Ala Trp Ser Pro Ala Ser Pro Arg Ile
    50                      55                      60

Pro Val Ala Phe Ile Ser Gly Gln Leu Pro Ala Arg Pro Gly Leu Gly
    65                      70                      75                      80

His Gly Leu Arg His Glu Ala Arg Pro Pro Pro Ala Pro Leu Pro Arg
                85                      90                      95

Gly Ser Ser Ile Pro Leu His Phe Trp Asn Val Cys Ala Ser Met Met
    100                      105                      110
```

Phe Val Tyr Leu Arg His Leu Lys Ile Tyr Phe Arg Tyr Glu Gly Lys  
 115 120 125

<210> 978  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 978  
 Ile Cys Leu Trp Gly Arg Pro Asn Leu Thr Thr Gln Gly Thr Leu Lys  
 1 5 10 15

Gly Ile Ser Gly Arg Arg Ser  
 20

<210> 979  
 <211> 78  
 <212> PRT  
 <213> Homo sapiens

<400> 979  
 Arg His Leu Gln Val Gly Gly Gly Gln His Gln Cys Gly Gln Ala Cys  
 1 5 10 15

Leu Asp Ser Ser Tyr Arg Pro Leu Leu Cys Met Met Trp Glu Pro Gly  
 20 25 30

His Ser His Ala Pro Ser Arg Ala Gln Gly Cys Gly Ser Thr Thr Glu  
 35 40 45

His Pro Leu Ser His Cys Pro Pro Leu Pro Arg Ala Leu Pro Ser Pro  
 50 55 60

Pro Leu Leu His His Ser Ser Phe Lys Val Pro Leu Leu Tyr  
 65 70 75

<210> 980  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (72)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 980  
 Met Pro Leu Gln Arg Arg Val Lys Val Lys Thr Thr Ser Ser Arg Cys  
 1 5 10 15

Leu Pro Gly Thr Thr Trp Gly Leu Thr Leu Phe Ser Met Leu Cys Cys

	20		25		30
Phe Trp Pro Leu Gly Ile Ala Ala Phe Tyr Phe Ser Gln Gly Thr Ser					
	35		40		45
Lys Ala Ile Ser Lys Gly Asp Phe Arg Leu Ala Ser Thr Thr Ser Arg					
	50		55		60
Arg Ala Leu Phe Leu Ala Thr Xaa Ala Ile Ala Val Gly Ala Gly Leu					
	65		70		75
Tyr Val Ala Val Val Val Ala Leu Ala Ala Tyr Met Ser Gln Asn Gly					
		85		90	95

His Gly

&lt;210&gt; 981

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 981

Met Pro Leu Gln Arg Arg Val Lys Val Lys Thr Thr Ser Ser Arg Cys
1 5 10 15

Leu Pro Gly Thr Thr Trp Asp Leu Leu Ser Ser Pro Cys Ser Ala Ala
20 25 30

Ser Gly His Trp Ala Leu Leu Pro Ser Thr Ser Pro Arg Gly Pro Ala
35 40 45

Arg Pro Ser Pro Lys Gly Thr Ser Ala Trp Pro Ala Pro Pro Pro Ala
50 55 60

Gly Pro Ser Ser
65

&lt;210&gt; 982

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (25)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (51)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (56)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 982

Met Leu Leu Pro Leu Phe Thr Leu Leu Ile Leu Leu Leu Arg Val Phe  
1 5 10 15

Pro Lys Glu Ile Ile Gln Asn Arg Xaa Lys Leu Lys Ala Glu Lys Cys  
20 25 30

Trp Asn Met Thr Leu Phe Ile Ala Val Gly Lys Met Gly Gly Trp Gly  
35 40 45

Thr Trp Xaa Met Leu Glu Ile Xaa Ala Leu Cys Glu Gly Pro Val Gly  
50 55 60

Glu Asp Ala Leu  
65

<210> 983

<211> 8

<212> PRT

<213> Homo sapiens

<400> 983

Arg Val Phe Pro Val Thr Thr Leu  
1 5

<210> 984

<211> 32

<212> PRT

<213> Homo sapiens

<400> 984

Met Leu Leu Pro Leu Phe Thr Leu Leu Ile Leu Leu Leu Arg Val Phe  
1 5 10 15

Pro Lys Glu Ile Ile Gln Asn Arg Lys Lys Leu Lys Ala Glu Lys Cys  
20 25 30

<210> 985

<211> 10

<212> PRT

<213> Homo sapiens

<400> 985

Met Gly Leu Phe Leu Phe Leu Val Ser Ser  
1 5 10

<210> 986

<211> 10  
 <212> PRT  
 <213> Homo sapiens

<400> 986  
 Met Gly Leu Phe Leu Phe Leu Val Ser Ser  
           1                          5                          10

<210> 987  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 987  
 Met Leu Thr Gly Val Ile Ser Gly Ser Thr Gly Ala Met Ala Leu Ser  
           1                          5                          10                          15  
  
 Leu Ala Ser Leu Ser Ala His Cys Phe Ala Phe Arg Cys Leu Ala Ala  
                           20                          25                          30  
  
 Pro Phe Tyr Phe Phe Ala Gly Leu Gly Lys His Gly Arg Arg Ile Leu  
                           35                          40                          45  
  
 Ile Ser Phe Leu Phe Ser Ala Trp  
           50                          55

<210> 988  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 988  
 Met Leu Thr Gly Val Ile Ser Gly Ser Thr Gly Ala Met Ala Leu Ser  
           1                          5                          10                          15  
  
 Leu Ala Ser Leu Ser Ala His Cys Phe Ala Phe Arg Cys Leu Ala Ala  
                           20                          25                          30  
  
 Pro Phe Tyr Phe Phe Ala Gly Leu Gly Lys His Gly Arg Arg Ile Leu  
                           35                          40                          45  
  
 Ile Ser Phe Leu Phe Ser Ala Trp  
           50                          55

<210> 989  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids.

<220>  
 <221> SITE  
 <222> (46)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 989  
 Ala Glu Xaa Ala Pro Leu His Phe His Leu Gly Asp Gly Glu Arg Leu  
   1                  5                  10                  15  
  
 His Leu Lys Lys Lys Lys Asn Lys Lys Lys Lys Pro Lys Gln Gly Trp  
                   20                  25                  30  
  
 Ala Arg Trp Leu Thr Pro Val Ile Ser Ala Leu Leu Glu Xaa Gly Ala  
           35                  40                  45  
  
 Gly Val Ser Pro Glu Val Met Ser  
       50                  55

<210> 990  
 <211> 29  
 <212> PRT  
 <213> Homo sapiens

<400> 990  
 Met Leu Val Ile Ile Ile Met Thr Ala Leu Val Ser His Val Pro Ser  
   1                  5                  10                  15  
  
 Val His Ser Val Pro His Ala Val Pro Phe Thr Ser Ser  
           20                  25

<210> 991  
 <211> 29  
 <212> PRT  
 <213> Homo sapiens

<400> 991  
 Met Leu Val Ile Ile Ile Met Thr Ala Leu Val Ser His Val Pro Ser  
   1                  5                  10                  15  
  
 Val His Ser Val Pro His Ala Val Pro Phe Thr Ser Ser  
           20                  25

<210> 992  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (7)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE

&lt;222&gt; (34)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 992

Val	Phe	Lys	Thr	Ile	Arg	Xaa	Arg	Glu	Ile	Ile	Leu	Tyr	His	Glu	Asn
1				5				10						15	

Ser	Thr	Gly	Lys	Thr	His	Pro	His	Asp	Ser	Leu	Ile	Ser	His	Trp	Val
			20					25					30		

Pro	Xaa	Thr	Thr	Gln	Gly	Asn	Tyr	Gly	Ser	Tyr	Lys	Met	Arg	Phe	Gly
		35					40					45			

Trp	Gly	His	Arg	Ala	Arg	Pro	Tyr	Gln	Pro	Pro	Lys
50						55					60

&lt;210&gt; 993

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (28)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 993

Met	Asp	Ile	Gln	Gly	Lys	Ala	Leu	Tyr	Ile	Arg	Phe	Leu	Leu	Thr	Leu
1				5				10						15	

Cys	Gln	Met	Val	Val	Ser	Val	Met	Gly	Lys	Arg	Xaa	Gln	Gly	Arg	Arg
			20					25					30		

Gly	Leu	Gly	Gly	Ala	Ala	Ala	Val	Gly	Arg	Glu	Ile	Cys	Arg	Arg	Trp
		35					40					45			

Gly	Cys	Cys	Val	Thr
50				

&lt;210&gt; 994

&lt;211&gt; 12

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 994

Leu	Cys	Trp	Thr	Arg	Ser	Ser	Val	Ile	Gly	Ala	His
1				5					10		

&lt;210&gt; 995

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 995



Met Asp Ile Gln Gly Lys Ala Leu Tyr Ile Arg Phe Leu Leu Thr Leu  
 1 5 10 15  
 Cys Gln Met Val Val Ser Val Met Gly Lys Arg Arg Gln Gly Arg Arg  
 20 25 30  
 Gly Leu Gly Gly Ala Ala Ala Val Gly Arg Glu Ile Cys Arg Arg Trp  
 35 40 45  
 Gly Cys Cys Val Thr  
 50

&lt;210&gt; 996

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (21)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 996

Lys Gln Gly Ser Leu Leu Gly Trp Ser Arg Val Ile Met Val Arg Gly  
 1 5 10 15

Ala Gln Ser Tyr Xaa Lys Gly Val Leu Cys Arg His Trp Lys Lys Phe  
 20 25 30

Gly Phe Tyr Ser Lys Trp Asn Trp Lys Pro Leu Glu Cys Phe Gln Asn  
 35 40 45

Arg Ser Asp Val Ile  
 50

&lt;210&gt; 997

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 997

Met Arg Leu Ile Leu Phe Ala Met Ser Pro Lys Leu Leu Phe Leu Phe  
 1 5 10 15

Leu Phe Leu Tyr Ile Ser Val Lys Ser Phe Asp Leu Val Leu Ser Phe  
 20 25 30

Arg Ser Val Leu Phe Met Ser Asp Leu Ile His Cys Phe Tyr His Gln  
 35 40 45

Leu His Phe Lys Leu  
 50

&lt;210&gt; 998

<211> 53  
 <212> PRT  
 <213> Homo sapiens

<400> 998

```
Met Arg Leu Ile Leu Phe Ala Met Ser Pro Lys Leu Leu Phe Leu Phe
  1           5           10           15
Leu Phe Leu Tyr Ile Ser Val Lys Ser Phe Asp Leu Val Leu Ser Phe
          20           25           30
Arg Ser Val Leu Phe Met Ser Asp Leu Ile His Cys Phe Tyr His Gln
          35           40           45
Leu His Phe Lys Leu
          50
```

<210> 999  
 <211> 79  
 <212> PRT  
 <213> Homo sapiens

<220>

<221> SITE

<222> (34)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 999

```
Leu Gly Ile Trp Leu Ile Pro Gly Leu Arg Arg Ala Asn Pro Lys Ile
  1           5           10           15
Ser Leu Glu Tyr Leu Met Val Pro Glu Asn Lys Tyr Ser Lys Asn Cys
          20           25           30
Glu Xaa Met Leu Lys Gly Leu Arg Ser Gln Pro Glu Gly Ala Ala Asn
          35           40           45
Gly Gln Ser Trp Asn Asn Ser Asn Lys Val Asn Lys Tyr Ser Ile Gly
          50           55           60
Leu Leu Leu Asn Lys Cys Met Ile His Glu Ser Thr Leu Lys Asp
          65           70           75
```

<210> 1000  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 1000

```
Met Phe His Arg Phe Phe Ile Leu Ser Ala Leu Ser Arg Ile Arg Ala
  1           5           10           15
Leu Thr Thr Phe Leu Asp Asp Leu Gly Met Thr His Gln Thr Leu Leu
          20           25           30
Leu Leu Leu Gly Pro Ser Ile Tyr Ser Phe Cys
          35           40           45
```

35

40

<210> 1001  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 1001  
 Met Phe His Arg Phe Phe Ile Leu Ser Ala Leu Ser Arg Ile Arg Ala  
           1                  5                  10                  15  
 Leu Thr Thr Phe Leu Asp Asp Leu Gly Met Thr His Gln Thr Leu Leu  
                   20                  25                  30  
 Leu Leu Leu Gly Pro Ser Ile Tyr Ser Phe Cys  
                   35                  40

<210> 1002  
 <211> 111  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (45)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (99)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (104)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (108)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (109)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (111)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1002  
 Val Gln Val Leu Thr Gln Tyr Tyr Gln Ser Asn Ile Leu Asn Ile Leu  
           1                  5                  10                  15

Ser Gln Val Ile Cys Leu Ser Ile Val Tyr Phe Glu Gly Phe Leu Ser  
                   20                                  25                                  30

Phe Thr Phe Asn Leu Phe Phe Ile Ser Ile Ser Ser Xaa Val Ala Leu  
                   35                                  40                                  45

Ser Tyr Ser Tyr Pro Asp Ile His Leu Ile Ser Glu Gly Leu Asp Ile  
                   50                                  55                                  60

Thr Leu Val Lys Met Gln Ser Asp Leu Ile Leu Phe Leu Lys Gln Thr  
                   65                                  70                                  75                                  80

Ala Val Leu Leu Glu Arg Pro Arg Ala His Arg Phe Ser Thr Arg Val  
                                   85                                  90                                  95

Gly Tyr Xaa Val Ser Val His Xaa Ser Gly Ser Xaa Xaa Val Xaa  
                   100                                  105                                  110

&lt;210&gt; 1003

&lt;211&gt; 43

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (13)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1003

Met Leu Tyr Val Arg Leu Leu Lys Asn Thr Lys Ile Xaa Val Leu Ile  
   1                                  5                                  10                                  15

Leu Pro Leu Phe Ile Leu Phe Leu Thr Leu Phe Leu Phe Ile Pro Asn  
                   20                                  25                                  30

Gly Phe Leu Phe Val Phe Val Ser Leu Tyr Phe  
                   35                                  40

&lt;210&gt; 1004

&lt;211&gt; 118

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1004

Met Phe Ile Val Phe Ser Val Leu Leu Leu Phe Phe Gln Phe Ala Ile  
   1                                  5                                  10                                  15

Cys Gln Phe Ala Asp Leu Ala Ile Phe Pro Leu Ser Met Cys Gln Leu  
                   20                                  25                                  30

Cys Asn Leu Ser Ala Arg Leu Ala Ala Pro Ser Ala Arg Phe Glu Gly  
                   35                                  40                                  45

Leu Gly Ile Asn Arg Thr Arg Lys Ala Glu Gly Ser Leu Pro Thr Thr  
                   50                                  55                                  60

Ala Val Gln Leu Leu Pro Tyr Lys Ser Gln Ala Val Gln Val Gln His  
 65 70 75 80  
 Pro Gln Ala Val Ile Val Asp Lys Leu Ser Val Ile Ser Leu Arg Ser  
 85 90 95  
 Ile Cys Ile Asp Gln Leu Lys Phe Met Glu Met Glu Asn Ile Ile Lys  
 100 105 110  
 Pro Gly Tyr Val Thr Ser  
 115

<210> 1005  
 <211> 64  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (55)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (59)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (63)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1005  
 Ser Ile Lys Ser Cys Ser Ser Phe Tyr Leu Gly Ser Arg Val Asn Arg  
 1 5 10 15

Ala Gln Leu Thr Asn Tyr Pro Pro Ala Met Arg Thr Tyr Val Tyr Glu  
 20 25 30

Cys His Cys Asp Lys Ser Thr Ser Arg Ala Thr Ala Gly Pro Ser Ile  
 35 40 45

Phe His Pro Gly Gly Val Xaa Gly Met Trp Xaa Ile Phe Ala Xaa Val  
 50 55 60

<210> 1006  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (21)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (23)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (42)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1006

His	Ser	Pro	Glu	Ser	Cys	Tyr	Ser	Phe	Asn	Leu	Gly	Ser	Arg	Met	Arg
1				5					10					15	

Ile	Ser	Val	Glu	Xaa	Lys	Xaa	Ala	Lys	Ser	Asn	Ser	Ala	Ala	Asp	Asn
			20					25						30	

Pro	Glu	Thr	Leu	Arg	Lys	Gly	Tyr	Val	Xaa
		35				40			

<210> 1007

<211> 76

<212> PRT

<213> Homo sapiens

<400> 1007

Met	Leu	Val	Leu	Leu	Ser	Leu	Leu	Ala	Ser	Gly	Gly	Leu	Pro	Leu	Leu
1				5					10					15	

Leu	Val	Gly	Asp	Val	Leu	Ala	Ser	Lys	Ser	Ser	Thr	Val	Leu	Phe	Leu
			20					25					30		

Pro	Gly	Asp	Ser	Ser	Pro	Gly	Cys	Ser	Met	Ile	Thr	Pro	Leu	Pro	Pro
		35					40					45			

Ser	Arg	Met	Cys	Leu	Lys	Ala	Gly	Ser	Ser	Gly	Glu	Gln	Thr	Val	Val
		50				55					60				

Pro	Leu	Ser	Leu	Leu	Leu	Arg	Ser	Lys	Ser	Ser	Lys
	65				70					75	

<210> 1008

<211> 76

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (71)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1008

Met	Leu	Val	Leu	Leu	Ser	Leu	Leu	Ala	Ser	Gly	Gly	Leu	Pro	Leu	Leu
1				5					10					15	

Leu Val Gly Asp Val Leu Ala Ser Lys Ser Ser Thr Val Leu Phe Leu  
                   20                                  25                                  30

Pro Gly Asp Ser Ser Pro Gly Cys Ser Met Ile Thr Pro Leu Pro Pro  
                   35                                  40                                  45

Ser Arg Met Cys Leu Lys Ala Gly Ser Ser Gly Glu Gln Thr Val Val  
           50                                  55                                  60

Pro Leu Ser Leu Leu Leu Xaa Ser Lys Ser Ser Lys  
   65                                  70                                  75

<210> 1009

<211> 9

<212> PRT

<213> Homo sapiens

<400> 1009

Cys His Leu Gln His Ser Cys Arg Glu  
   1                                  5

<210> 1010

<211> 34

<212> PRT

<213> Homo sapiens

<400> 1010

Met Thr Ala Leu Phe Cys Ser Leu Leu His Ser Leu Val Ser Leu Leu  
   1                                  5                                  10                                  15

Leu Pro Thr Lys Trp Gly Gln Gly Lys Ala Phe Leu Thr Gly Pro Leu  
                   20                                  25                                  30

Phe Ser

<210> 1011

<211> 10

<212> PRT

<213> Homo sapiens

<400> 1011

Phe Ser Cys Cys Leu Ser Leu Pro Ile Ser  
   1                                  5                                  10

<210> 1012

<211> 71

<212> PRT

<213> Homo sapiens

<400> 1012

Met Trp Cys Leu Val Phe Cys Ser Cys Val Ser Leu Pro Arg Met Met  
 1 5 10 15  
 Ala Ser Ser Phe Ile His Asp Ile Ala Lys Asp Met Ile Ser Phe Leu  
 20 25 30  
 Phe Met Ser Ala Trp Tyr Tyr Thr Tyr Phe Asn Ser Phe Glu Ile Tyr  
 35 40 45  
 Arg Phe Gln Phe Thr Phe Ile Glu Tyr Ser Leu Trp Val Lys His His  
 50 55 60  
 Ala Ser Leu Pro Gly Val Gln  
 65 70

<210> 1013  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<400> 1013  
 Met Trp Cys Leu Val Phe Cys Ser Cys Val Ser Leu Pro Arg Met Met  
 1 5 10 15  
 Ala Ser Ser Phe Ile His Asp Ile Ala Lys Asp Met Ile Ser Phe Leu  
 20 25 30  
 Phe Met Ser Ala Trp Tyr Tyr Thr Tyr Phe Asn Ser Phe Glu Ile Tyr  
 35 40 45  
 Arg Phe Gln Phe Thr Phe Ile Glu Tyr Ser Leu Trp Val Lys His His  
 50 55 60  
 Ala Ser Leu Pro Gly Val Gln  
 65 70

<210> 1014  
 <211> 74  
 <212> PRT  
 <213> Homo sapiens

<400> 1014  
 Ala Arg Arg Glu Gly Arg Ser Arg Thr Ala Val Gly Ser Thr Pro Ala  
 1 5 10 15  
 Ala Pro Leu Ser Leu Thr Arg Gly Gly Gln Cys Pro Ser Arg Gly Ser  
 20 25 30  
 Pro Leu Ala Leu Phe Gly His Pro Leu Ala Ser Gln Lys His Ser Glu  
 35 40 45  
 Thr Lys Thr Phe Pro Phe Pro Pro His Met Val Leu Arg Leu Pro  
 50 55 60  
 Ala Ala Met Gln Leu Lys Gln Leu Ile Phe  
 65 70



&lt;210&gt; 1015

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1015

Met	Ser	Leu	Ser	Leu	Ile	Ser	Leu	Ser	Phe	Leu	Phe	Pro	Ala	Gly	Ala
1				5					10					15	

Gly	Arg	Arg	Ser	Cys
			20	

&lt;210&gt; 1016

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1016

Met	Ser	Leu	Ser	Leu	Ile	Ser	Leu	Ser	Phe	Leu	Phe	Pro	Ala	Gly	Ala
1				5					10					15	

Gly	Arg	Arg	Ser	Cys
			20	

&lt;210&gt; 1017

&lt;211&gt; 25

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1017

Met	Leu	His	Trp	Gly	Val	Leu	Cys	Ser	Leu	Phe	Leu	Met	Leu	Phe	Asn
1				5					10					15	

Glu	Gly	Ala	Ser	Ala	Ser	Leu	Gln	Gln
			20				25	

&lt;210&gt; 1018

&lt;211&gt; 55

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1018

Met	Leu	His	Trp	Gly	Val	Leu	Cys	Ser	Leu	Phe	Leu	Met	Leu	Phe	Asn
1				5					10					15	

Glu	Gly	Ala	Ser	Ala	Ser	Leu	Ser	Asn	Lys	Arg	Ser	Met	Arg	Glu	Asp
			20					25					30		

Arg	Ala	Val	His	Gly	Tyr	Gly	Tyr	Trp	Thr	Arg	Ile	Phe	Gly	Lys	Val
		35					40						45		

Lys Ala Asp His Trp Ile Trp  
50 55

<210> 1019

<211> 95

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (13)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1019

Met Arg Ala Cys Leu Cys Ala Gly Val Cys Met Cys Xaa Ala Ser Cys  
1 5 10 15

Leu Gly Leu Pro Met Asn Val Val Glu Cys Tyr Thr Trp Arg Val Leu  
20 25 30

Val Phe His Gln Phe Gln Asp Glu Glu Leu His Asp Thr Val Asp Leu  
35 40 45

Glu Thr Ile Pro Leu Glu Arg Gln Pro Arg Asp Val Gln His Pro Val  
50 55 60

Ser Thr Arg Ile Leu Tyr Leu His Val Tyr Phe Val Ala Val Thr Leu  
65 70 75 80

Thr Leu Ile Arg Ile Leu Gln Leu Trp Thr Glu Ala Phe Ser Pro  
85 90 95

<210> 1020

<211> 261

<212> PRT

<213> Homo sapiens

<400> 1020

Met Glu Leu Leu Gln Val Thr Ile Leu Phe Leu Leu Pro Ser Ile Cys  
1 5 10 15

Ser Ser Asn Ser Thr Gly Val Leu Glu Ala Ala Asn Asn Ser Leu Val  
20 25 30

Val Thr Thr Thr Lys Pro Ser Ile Thr Thr Pro Asn Thr Glu Ser Leu  
35 40 45

Gln Lys Asn Val Val Thr Pro Thr Thr Gly Thr Thr Pro Lys Gly Thr  
50 55 60

Ile Thr Asn Glu Leu Leu Lys Met Ser Leu Met Ser Thr Ala Thr Phe  
65 70 75 80

Leu Thr Ser Lys Asp Glu Gly Leu Lys Ala Thr Thr Thr Asp Val Arg  
85 90 95

Lys Asn Asp Ser Ile Ile Ser Asn Val Thr Val Thr Ser Val Thr Leu  
 100 105 110  
 Pro Asn Ala Val Ser Thr Leu Gln Ser Ser Lys Pro Lys Thr Glu Thr  
 115 120 125  
 Gln Ser Ser Ile Lys Thr Thr Glu Ile Pro Gly Ser Val Leu Gln Pro  
 130 135 140  
 Asp Ala Ser Pro Ser Lys Thr Gly Thr Leu Thr Ser Ile Pro Val Thr  
 145 150 155 160  
 Ile Pro Glu Asn Thr Ser Gln Ser Gln Val Ile Gly Thr Glu Gly Gly  
 165 170 175  
 Lys Asn Ala Ser Thr Ser Ala Thr Ser Arg Ser Tyr Ser Ser Ile Ile  
 180 185 190  
 Leu Pro Val Val Ile Ala Leu Ile Val Ile Thr Leu Ser Val Phe Val  
 195 200 205  
 Leu Val Gly Leu Tyr Arg Met Cys Trp Lys Ala Asp Pro Gly Thr Pro  
 210 215 220  
 Glu Asn Gly Asn Asp Gln Pro Gln Ser Asp Lys Glu Ser Val Lys Leu  
 225 230 235 240  
 Leu Thr Val Lys Thr Ile Ser His Glu Ser Gly Glu His Ser Ala Gln  
 245 250 255  
 Gly Lys Thr Lys Asn  
 260

<210> 1021  
 <211> 260  
 <212> PRT  
 <213> Homo sapiens

<400> 1021  
 Met Glu Leu Leu Gln Val Thr Ile Leu Phe Leu Leu Pro Ser Ile Cys  
 1 5 10 15  
 Ser Ser Asn Ser Thr Gly Val Leu Glu Ala Ala Asn Asn Ser Leu Val  
 20 25 30  
 Thr Thr Thr Lys Pro Ser Ile Thr Thr Pro Asn Thr Glu Ser Leu Gln  
 35 40 45  
 Lys Asn Val Val Thr Pro Thr Thr Gly Thr Thr Pro Lys Gly Thr Ile  
 50 55 60  
 Thr Asn Glu Leu Leu Lys Met Ser Leu Met Ser Thr Ala Thr Phe Leu  
 65 70 75 80  
 Thr Ser Lys Asp Glu Gly Leu Lys Ala Thr Thr Thr Asp Val Arg Lys  
 85 90 95  
 Asn Asp Ser Ile Ile Ser Asn Val Thr Val Thr Ser Val Thr Leu Pro

100 105 110  
 Asn Ala Val Ser Thr Leu Gln Ser Ser Lys Pro Lys Thr Glu Thr Gln  
 115 120 125  
 Ser Ser Ile Lys Thr Thr Glu Ile Pro Gly Ser Val Leu Gln Pro Asp  
 130 135 140  
 Ala Ser Pro Ser Lys Thr Gly Thr Leu Thr Ser Ile Pro Val Thr Ile  
 145 150 155 160  
 Pro Glu Asn Thr Ser Gln Ser Gln Val Ile Gly Thr Glu Gly Gly Lys  
 165 170 175  
 Asn Ala Ser Thr Ser Ala Thr Ser Arg Ser Tyr Ser Ser Ile Ile Leu  
 180 185 190  
 Pro Val Val Ile Ala Leu Ile Val Ile Thr Leu Ser Val Phe Val Leu  
 195 200 205  
 Val Gly Leu Tyr Arg Met Cys Trp Lys Ala Asp Pro Gly Thr Pro Glu  
 210 215 220  
 Asn Gly Asn Asp Gln Pro Gln Ser Asp Lys Glu Ser Val Lys Leu Leu  
 225 230 235 240  
 Thr Val Lys Thr Ile Ser His Glu Ser Gly Glu His Ser Ala Gln Gly  
 245 250 255  
 Lys Thr Lys Asn  
 260

<210> 1022  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<400> 1022  
 Cys Val Leu Glu Pro Thr Ser Ser Gln Ser Ile Ala Pro Asp Leu Gly  
 1 5 10 15  
 Arg Glu Ser Thr Phe Ser Ile Gln Arg Asn Lys Asn Met Gln Phe Met  
 20 25 30  
 Val Val Leu Trp Thr Leu Thr Asp Cys Glu Gly Lys Val Tyr Pro Lys  
 35 40 45  
 Ala Val Ile Cys Arg  
 50

<210> 1023  
 <211> 41  
 <212> PRT  
 <213> Homo sapiens

<400> 1023

Met Met Leu Pro Val Ile Ser Leu Phe Leu Ile Ser Leu His Leu Pro  
 1 5 10 15  
 Ile Phe Cys Phe Gln Arg Leu Leu Leu Phe Lys Gly Phe Leu Phe Ile  
 20 25 30  
 Ala Asn Ser Ser Asn Leu His Ile Lys  
 35 40

<210> 1024  
 <211> 41  
 <212> PRT  
 <213> Homo sapiens

<400> 1024  
 Met Met Leu Pro Val Ile Ser Leu Phe Leu Ile Ser Leu His Leu Pro  
 1 5 10 15  
 Ile Phe Cys Phe Gln Arg Leu Leu Leu Phe Lys Gly Phe Leu Phe Ile  
 20 25 30  
 Ala Asn Ser Ser Asn Leu His Ile Lys  
 35 40

<210> 1025  
 <211> 162  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (16)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (17)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (18)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1025  
 Lys Thr Val Met Leu Pro Ile Ala Gln Glu Val Gln Ser Pro Val Xaa  
 1 5 10 15  
 Xaa Xaa Cys Asp Lys Leu Ala Ala Asp Cys Ala His Glu Leu Arg Arg  
 20 25 30  
 His Gly Val Ser Cys Val Ser Leu Trp Pro Gly Ile Val Gln Thr Glu  
 35 40 45  
 Leu Leu Lys Glu His Met Ala Lys Glu Glu Val Leu Gln Asp Pro Val  
 50 55 60

Leu Lys Gln Phe Lys Ser Ala Phe Ser Ser Ala Glu Thr Thr Glu Leu  
 65 70 75 80  
 Ser Gly Lys Cys Val Val Ala Leu Ala Thr Asp Pro Asn Ile Leu Ser  
 85 90 95  
 Leu Ser Gly Lys Val Leu Pro Ser Cys Asp Leu Ala Arg Arg Tyr Gly  
 100 105 110  
 Leu Arg Asp Val Asp Gly Arg Pro Val Gln Asp Tyr Leu Ser Leu Ser  
 115 120 125  
 Ser Val Leu Ser His Val Ser Gly Leu Gly Trp Leu Ala Ser Tyr Leu  
 130 135 140  
 Pro Ser Phe Leu Arg Val Pro Lys Trp Ile Ile Ala Leu Tyr Thr Ser  
 145 150 155 160  
 Lys Phe

<210> 1026  
 <211> 45  
 <212> PRT  
 <213> Homo sapiens

<400> 1026  
 Met Ala Arg Trp Leu Leu Pro Cys Leu Pro Pro Leu His Ser Val Thr  
 1 5 10 15  
 Ser Trp Leu Leu Thr Val Pro Thr Ser Cys Gly Ala Met Gly Ser Ala  
 20 25 30  
 Val Cys Leu Cys Gly Arg Gly Leu Cys Arg Gln Asn Cys  
 35 40 45

<210> 1027  
 <211> 37  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (29)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1027  
 Leu Pro Pro Phe Pro Gln Cys Asp Lys Leu Ala Ala Asp Cys Pro Thr  
 1 5 10 15  
 Ser Cys Gly Ala Met Gly Ser Ala Val Cys Leu Cys Xaa Arg Gly Leu  
 20 25 30  
 Cys Arg Gln Asn Cys  
 35

<210> 1028  
 <211> 45  
 <212> PRT  
 <213> Homo sapiens

<400> 1028  
 Met Ala Arg Trp Leu Leu Pro Cys Leu Pro Pro Leu His Ser Val Thr  
     1                    5                    10                    15  
 Ser Trp Leu Leu Thr Val Pro Thr Ser Cys Gly Ala Met Gly Ser Ala  
                     20                    25                    30  
 Val Cys Leu Cys Gly Arg Gly Leu Cys Arg Gln Asn Cys  
                     35                    40                    45

<210> 1029  
 <211> 29  
 <212> PRT  
 <213> Homo sapiens

<400> 1029  
 Met Asp Gln Phe Leu Gln Tyr Leu Leu Glu Cys Met Leu Leu Cys Thr  
     1                    5                    10                    15  
 Thr Ala Gly Ala Ser Gly Ala Thr Tyr Val Pro Thr Arg  
                     20                    25

<210> 1030  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 1030  
 Met Asp Gln Phe Leu Gln Tyr Leu Leu Glu Cys Met Leu Leu Cys Thr  
     1                    5                    10                    15  
 Thr Ala Gly Ala Ser Gly Ala His Leu Cys Thr Asn Glu Met Thr Leu  
                     20                    25                    30  
 Leu Glu Ala Ile Leu Tyr Leu Gln Trp Met  
                     35                    40

<210> 1031  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<400> 1031  
 Cys Leu Ile Leu Gln Glu Glu Asn Arg Lys Glu Leu Ser Asn Leu Ala  
     1                    5                    10                    15

Asn Arg Tyr Lys Ile Asp Ser Arg Val Leu Ser Pro Thr Leu Gly Trp  
                   20                                  25                                  30

Gln Pro Val Gly Gln Thr Pro Lys Thr Val Ala Asp Val Phe Phe Cys  
                   35                                  40                                  45

Leu Pro Ser Leu Gly  
                   50

<210> 1032

<211> 56

<212> PRT

<213> Homo sapiens

<400> 1032

Met Leu Leu Phe His Val Trp Val Asp Leu Ala Cys Trp Gly Val Leu  
           1                                  5                                  10                                  15

Val His Ser Leu Lys Leu Ala Ser Phe His Trp Gly Leu Lys Ser Thr  
                   20                                  25                                  30

Ser Thr Pro Thr Leu Val Met Ser Pro Glu Asp Pro Gly Asp Ser Thr  
                   35                                  40                                  45

Val Asn Ile Val Ser Thr Leu Leu  
                   50                                  55

<210> 1033

<211> 4

<212> PRT

<213> Homo sapiens

<400> 1033

Val Trp Met Pro  
           1

<210> 1034

<211> 56

<212> PRT

<213> Homo sapiens

<400> 1034

Met Leu Leu Phe His Val Trp Val Asp Leu Ala Cys Trp Gly Val Leu  
           1                                  5                                  10                                  15

Val His Ser Leu Lys Leu Ala Ser Phe His Trp Gly Leu Lys Ser Thr  
                   20                                  25                                  30

Ser Thr Pro Thr Leu Val Met Ser Pro Glu Asp Pro Gly Asp Ser Thr  
                   35                                  40                                  45

Val Asn Ile Val Ser Thr Leu Leu  
                   50                                  55



<210> 1035  
 <211> 491  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (42)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (43)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (44)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1035  
 Ala Ala Arg Val Gly Arg His Gly Arg Arg Arg Arg Ser Ala Ala Met  
           1                  5                  10                  15

Ala Gly Arg Gly Gly Ser Ala Leu Leu Ala Leu Cys Gly Ala Leu Ala  
                   20                  25                  30

Ala Cys Gly Trp Leu Leu Gly Ala Glu Xaa Xaa Xaa Pro Gly Ala Pro  
           35                  40                  45

Ala Ala Gly Met Arg Arg Arg Arg Arg Leu Gln Gln Glu Asp Gly Ile  
           50                  55                  60

Ser Phe Glu Tyr His Arg Tyr Pro Glu Leu Arg Glu Ala Leu Val Ser  
       65                  70                  75                  80

Val Trp Leu Gln Cys Thr Ala Ile Ser Arg Ile Tyr Thr Val Gly Arg  
                   85                  90                  95

Ser Phe Glu Gly Arg Glu Leu Leu Val Ile Glu Leu Ser Asp Asn Pro  
           100                  105                  110

Gly Val His Glu Pro Gly Glu Pro Glu Phe Lys Tyr Ile Gly Asn Met  
           115                  120                  125

His Gly Asn Glu Ala Val Gly Arg Glu Leu Leu Ile Phe Leu Ala Gln  
       130                  135                  140

Tyr Leu Cys Asn Glu Tyr Gln Lys Gly Asn Glu Thr Ile Val Asn Leu  
       145                  150                  155                  160

Ile His Ser Thr Arg Ile His Ile Met Pro Ser Leu Asn Pro Asp Gly  
           165                  170                  175

Phe Glu Lys Ala Ala Ser Gln Pro Gly Glu Leu Lys Asp Trp Phe Val  
           180                  185                  190

Gly Arg Ser Asn Ala Gln Gly Ile Asp Leu Asn Arg Asn Phe Pro Asp

195					200					205					
Leu	Asp	Arg	Ile	Val	Tyr	Val	Asn	Glu	Lys	Glu	Gly	Gly	Pro	Asn	Asn
210					215					220					
His	Leu	Leu	Lys	Asn	Met	Lys	Lys	Ile	Val	Asp	Gln	Asn	Thr	Lys	Leu
225					230					235					240
Ala	Pro	Glu	Thr	Lys	Ala	Val	Ile	His	Trp	Ile	Met	Asp	Ile	Pro	Phe
				245					250					255	
Val	Leu	Ser	Ala	Asn	Leu	His	Gly	Gly	Asp	Leu	Val	Ala	Asn	Tyr	Pro
			260					265					270		
Tyr	Asp	Glu	Thr	Arg	Ser	Gly	Ser	Ala	His	Glu	Tyr	Ser	Ser	Ser	Pro
	275						280					285			
Asp	Asp	Ala	Ile	Phe	Gln	Ser	Leu	Ala	Arg	Ala	Tyr	Ser	Ser	Phe	Asn
290						295				300					
Pro	Ala	Met	Ser	Asp	Pro	Asn	Arg	Pro	Pro	Cys	Arg	Lys	Asn	Asp	Asp
305					310					315					320
Asp	Ser	Ser	Phe	Val	Asp	Gly	Thr	Thr	Asn	Gly	Gly	Ala	Trp	Tyr	Ser
				325					330					335	
Val	Pro	Gly	Gly	Met	Gln	Asp	Phe	Asn	Tyr	Leu	Ser	Ser	Asn	Cys	Phe
			340					345					350		
Glu	Ile	Thr	Val	Glu	Leu	Ser	Cys	Glu	Lys	Phe	Pro	Pro	Glu	Glu	Thr
	355						360					365			
Leu	Lys	Thr	Tyr	Trp	Glu	Asp	Asn	Lys	Asn	Ser	Leu	Ile	Ser	Tyr	Leu
370					375					380					
Glu	Gln	Ile	His	Arg	Gly	Val	Lys	Gly	Phe	Val	Arg	Asp	Leu	Gln	Gly
385					390					395					400
Asn	Pro	Ile	Ala	Asn	Ala	Thr	Ile	Ser	Val	Glu	Gly	Ile	Asp	His	Asp
				405					410					415	
Val	Thr	Ser	Ala	Lys	Asp	Gly	Asp	Tyr	Trp	Arg	Leu	Leu	Ile	Pro	Gly
			420					425					430		
Asn	Tyr	Lys	Leu	Thr	Ala	Ser	Ala	Pro	Gly	Tyr	Leu	Ala	Ile	Thr	Lys
	435						440					445			
Lys	Val	Ala	Val	Pro	Tyr	Ser	Pro	Ala	Ala	Gly	Val	Asp	Phe	Glu	Leu
450					455					460					
Glu	Ser	Phe	Ser	Glu	Arg	Lys	Glu	Glu	Glu	Lys	Glu	Glu	Leu	Met	Glu
465					470					475					480
Trp	Trp	Lys	Met	Met	Ser	Glu	Thr	Leu	Asn	Phe					
				485					490						

&lt;210&gt; 1036

&lt;211&gt; 255

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1036

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Leu Leu Leu Trp Thr Met Ser Val Ile Phe Phe Ala Cys Val Val Arg
 1           5           10           15

Val Arg Asp Gly Leu Pro Leu Ser Ala Ser Thr Asp Phe Tyr His Thr
          20           25           30

Gln Asp Phe Leu Glu Trp Arg Arg Arg Leu Lys Ser Leu Ala Leu Arg
          35           40           45

Leu Ala Gln Tyr Pro Gly Arg Gly Ser Ala Glu Gly Cys Asp Phe Ser
          50           55           60

Ile His Phe Ser Ser Phe Gly Asp Val Ala Cys Met Ala Ile Cys Ser
 65           70           75           80

Cys Gln Cys Pro Ala Ala Met Ala Phe Cys Phe Leu Glu Thr Leu Trp
          85           90           95

Trp Glu Phe Thr Ala Ser Tyr Asp Thr Thr Cys Ile Gly Leu Ala Ser
          100          105          110

Arg Pro Tyr Ala Phe Leu Glu Phe Asp Ser Ile Ile Gln Lys Val Lys
          115          120          125

Trp His Phe Asn Tyr Val Ser Ser Ser Gln Met Glu Cys Ser Leu Glu
          130          135          140

Lys Ile Gln Glu Glu Leu Lys Leu Gln Pro Pro Ala Val Leu Thr Leu
          145          150          155          160

Glu Asp Thr Asp Val Ala Asn Gly Val Met Asn Gly His Thr Pro Met
          165          170          175

His Leu Glu Pro Ala Pro Asn Phe Arg Met Glu Pro Val Thr Ala Leu
          180          185          190

Gly Ile Leu Ser Leu Ile Leu Asn Ile Met Cys Ala Ala Leu Asn Leu
          195          200          205

Ile Arg Gly Val His Leu Ala Glu His Ser Leu Gln Val Ala His Glu
          210          215          220

Glu Ile Gly Asn Ile Leu Ala Phe Leu Val Pro Phe Val Ala Cys Ile
          225          230          235          240

Phe Gln Asp Pro Arg Ser Trp Phe Cys Trp Leu Asp Gln Thr Ser
          245          250          255

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&lt;210&gt; 1037

&lt;211&gt; 99

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (44)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1037

Met Leu Leu Leu Leu Val Phe Leu Val Ala Cys Phe Ile Asn Arg Lys  
 1 5 10 15

Cys Gln Lys Gln Arg Lys Lys Lys Pro Ala Glu Asp Ile Leu Glu Glu  
 20 25 30

Tyr Pro Leu Asn Thr Lys Val Glu Val Pro Lys Xaa His Pro Asp Arg  
 35 40 45

Val Glu Lys Asn Val Asn Arg His Tyr Cys Thr Val Arg Asn Val Asn  
 50 55 60

Ile Leu Ser Glu Pro Glu Ala Ala Tyr Thr Phe Lys Gly Ala Lys Val  
 65 70 75 80

Lys Arg Leu Asn Leu Glu Val Arg Val His Asn Asn Leu Gln Asp Gly  
 85 90 95

Thr Glu Val

&lt;210&gt; 1038

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1038

Met Pro Val Leu Leu  
 1 5

&lt;210&gt; 1039

&lt;211&gt; 99

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1039

Met Leu Leu Leu Leu Val Phe Leu Val Ala Cys Phe Ile Asn Arg Lys  
 1 5 10 15

Cys Gln Lys Gln Arg Lys Lys Lys Pro Ala Glu Asp Ile Leu Glu Glu  
 20 25 30

Tyr Pro Leu Asn Thr Lys Val Glu Val Pro Lys Arg His Pro Asp Arg  
 35 40 45

Val Glu Lys Asn Val Asn Arg His Tyr Cys Thr Val Arg Asn Val Asn  
 50 55 60

Ile Leu Ser Glu Pro Glu Ala Ala Tyr Thr Phe Lys Gly Ala Lys Val  
 65 70 75 80

Lys Arg Leu Asn Leu Glu Val Arg Val His Asn Asn Leu Gln Asp Gly  
                     85                    90                    95

Thr Glu Val

<210> 1040

<211> 70

<212> PRT

<213> Homo sapiens

<400> 1040

Leu Leu Asp Leu Thr Asn Arg Leu Val Thr Cys Ile Asp Gln Ser Lys  
       1                    5                    10                    15

Pro Asn Ile Leu Ala Ser Leu Ser Leu Ala Glu Gln Thr Arg Val Gly  
                     20                    25                    30

Ile Trp Val Gly Ala Phe Ser Ile Lys Asp Asn Leu Ser Leu Cys Ser  
                     35                    40                    45

Gln Gly Glu His Leu Cys Phe Val Leu Lys Ala Gly Ser Pro Trp Phe  
                     50                    55                    60

Ala Asn Cys Leu Gln Glu  
       65                    70

<210> 1041

<211> 48

<212> PRT

<213> Homo sapiens

<400> 1041

Met Leu Gln Tyr Thr Trp Leu Ile Leu Val Phe Leu Ser Ser Cys Leu  
       1                    5                    10                    15

Ser Ala Thr Trp Phe Cys Lys Val Val Val Ala Ala Ile Gly Ser Thr  
                     20                    25                    30

Val Gly Ser Ser Arg Leu His Phe Lys Arg Ser Gly Gln Cys Leu Arg  
                     35                    40                    45

<210> 1042

<211> 48

<212> PRT

<213> Homo sapiens

<400> 1042

Met Leu Gln Tyr Thr Trp Leu Ile Leu Val Phe Leu Ser Ser Cys Leu  
       1                    5                    10                    15

Ser Ala Thr Trp Phe Cys Lys Val Val Val Ala Ala Ile Gly Ser Thr  
20 25 30

Val Gly Ser Ser Arg Leu His Phe Lys Arg Ser Gly Gln Cys Leu Arg  
35 40 45

<210> 1043

<211> 52

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (39)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1043

Met Val Ala Val Asp Phe Ser Cys Leu Ser Phe Ile Leu Leu Gly Ile  
1 5 10 15

Leu Val Leu Tyr Ile Tyr Phe Val Met Tyr Ala Cys Ser Ile Pro Thr  
20 25 30

Leu Phe Ser Val Phe Tyr Xaa Glu Glu Met Leu Asn Leu Ser Lys Leu  
35 40 45

Ser Cys Ile Tyr  
50

<210> 1044

<211> 13

<212> PRT

<213> Homo sapiens

<400> 1044

Cys Phe His Phe Phe Leu Cys Pro Ile Leu Val Leu Val  
1 5 10

<210> 1045

<211> 1

<212> PRT

<213> Homo sapiens

<400> 1045

Cys  
1

<210> 1046

<211> 37

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1046

Met Val Ala Val Asp Phe Ser Cys Leu Ser Phe Ile Leu Leu Gly Ile  
 1 5 10 15

Leu Val Leu Tyr Ile Tyr Phe Val Met Tyr Ala Cys Ser Ile Pro Thr  
 20 25 30

Leu Phe Ser Val Leu  
 35

&lt;210&gt; 1047

&lt;211&gt; 6

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1047

Asn Leu Ser Lys Ile Ile  
 1 5

&lt;210&gt; 1048

&lt;211&gt; 183

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1048

Met Met Asn Val Ser Lys Ile Ser Phe Phe Ala Met Phe Leu Met Tyr  
 1 5 10 15

Leu Leu Ala Ala Leu Phe Gly Tyr Leu Thr Phe Tyr Glu His Val Glu  
 20 25 30

Ser Glu Leu Leu His Thr Tyr Ser Ser Ile Leu Gly Thr Asp Ile Leu  
 35 40 45

Leu Leu Ile Val Arg Leu Ala Val Leu Met Ala Val Thr Leu Thr Val  
 50 55 60

Pro Val Val Ile Phe Pro Ile Arg Ser Ser Val Thr His Leu Leu Cys  
 65 70 75 80

Ala Ser Lys Asp Phe Ser Trp Trp Arg His Ser Leu Ile Thr Val Ser  
 85 90 95

Ile Leu Ala Phe Thr Asn Leu Leu Val Ile Phe Val Pro Thr Ile Arg  
 100 105 110

Asp Ile Phe Gly Phe Ile Gly Ala Ser Ala Ala Ser Met Leu Ile Phe  
 115 120 125

Ile Leu Pro Ser Ala Phe Tyr Ile Lys Leu Val Lys Lys Glu Pro Met  
 130 135 140

Lys Ser Val Gln Lys Ile Gly Ala Leu Phe Phe Leu Leu Ser Gly Val

145                                      150                                      155                                      160  
 Leu Val Met Thr Gly Ser Met Ala Leu Ile Val Leu Asp Trp Val His  
    165                                      170                                      175  
 Asn Ala Pro Gly Gly Gly His  
    180

&lt;210&gt; 1049

&lt;211&gt; 183

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1049

Met Met Asn Val Ser Lys Ile Ser Phe Phe Ala Met Phe Leu Met Tyr  
   1  5  10  15  
 Leu Leu Ala Ala Leu Phe Gly Tyr Leu Thr Phe Tyr Glu His Val Glu  
   20  25  30  
 Ser Glu Leu Leu His Thr Tyr Ser Ser Ile Leu Gly Thr Asp Ile Leu  
   35  40  45  
 Leu Leu Ile Val Arg Leu Ala Val Leu Met Ala Val Thr Leu Thr Val  
   50  55  60  
 Pro Val Val Ile Phe Pro Ile Arg Ser Ser Val Thr His Leu Leu Cys  
   65  70  75  80  
 Ala Ser Lys Asp Phe Ser Trp Trp Arg His Ser Leu Ile Thr Val Ser  
   85  90  95  
 Ile Leu Ala Phe Thr Asn Leu Leu Val Ile Phe Val Pro Thr Ile Arg  
   100  105  110  
 Asp Ile Phe Gly Phe Ile Gly Ala Ser Ala Ala Ser Met Leu Ile Phe  
   115  120  125  
 Ile Leu Pro Ser Ala Phe Tyr Ile Lys Leu Val Lys Lys Glu Pro Met  
   130  135  140  
 Lys Ser Val Gln Lys Ile Gly Ala Leu Phe Phe Leu Leu Ser Gly Val  
   145  150  155  160  
 Leu Val Met Thr Gly Ser Met Ala Leu Ile Val Leu Asp Trp Val His  
   165  170  175  
 Asn Ala Pro Gly Gly Gly His  
   180

&lt;210&gt; 1050

&lt;211&gt; 31

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;



&lt;221&gt; SITE

&lt;222&gt; (9)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1050

Pro Gly Pro Pro Leu Ser Phe Phe Xaa Phe Phe Phe Phe Phe Phe  
 1 5 10 15

Phe Phe Phe Phe Phe Phe Phe Lys His Cys Ile Gln Val Ser Leu  
 20 25 30

&lt;210&gt; 1051

&lt;211&gt; 63

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (54)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1051

Met Asn His Cys Cys Ser Ser Gln Arg Phe Leu Asn Ile Leu Ser Phe  
 1 5 10 15

Cys Ile Ser Pro Pro Phe Pro Leu Thr Phe Ile Tyr Leu Ile Met Tyr  
 20 25 30

Leu Phe Ile Tyr Leu Tyr Thr Phe Ala Pro Phe Ser Thr Asn Thr Lys  
 35 40 45

Gln Ser Lys Lys Lys Xaa Tyr Ile Tyr Ile Ser Val Tyr Val Leu  
 50 55 60

&lt;210&gt; 1052

&lt;211&gt; 63

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1052

Met Asn His Cys Cys Ser Ser Gln Arg Phe Leu Asn Ile Leu Ser Phe  
 1 5 10 15

Cys Ile Ser Pro Pro Phe Pro Leu Thr Phe Ile Tyr Leu Ile Met Tyr  
 20 25 30

Leu Phe Ile Tyr Leu Tyr Thr Phe Ala Pro Phe Ser Thr Asn Thr Lys  
 35 40 45

Gln Ser Lys Lys Lys Lys Tyr Ile Tyr Ile Ser Val Tyr Val Leu  
 50 55 60

&lt;210&gt; 1053

&lt;211&gt; 75

<212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (9)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1053

Ala Asp Asn Asn Phe Thr Gln Glu Xaa Ala Met Thr Met Ile Thr Pro  
 1 5 10 15

Ser Ser Lys Leu Thr Leu Thr Lys Gly Asn Lys Ser Trp Ser Ser Thr  
 20 25 30

Ala Val Ala Ala Ala Leu Glu Leu Val Asp Pro Pro Gly Cys Arg Asn  
 35 40 45

Ser Ala Arg Asp Asn Gln Phe Ile Leu Leu Asn Trp His Ile Leu Asn  
 50 55 60

His Asp Ser Gln Gln Leu Gly Asn Ile Phe Phe  
 65 70 75

<210> 1054  
 <211> 113  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (31)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (79)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (102)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (111)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1054

Cys Gly Val Phe Trp Leu Leu Ser Leu Leu Cys Cys Ile Lys Glu Gln  
 1 5 10 15

Gln Phe Glu Gln Val Val Ala Leu Leu Gln Ser Ile Arg Xaa Cys  
 20 25 30

Gln Asp Arg Ala Leu Leu Val Asn Asn Ala Tyr Gln Gly Leu Ala Ser  
 35 40 45

Leu Val Lys Val Ser Glu Leu Ala Ala Phe Lys Val Val Val Gln Glu  
 50 55 60  
 Glu Gly Gly Ser Gly Leu Ser Leu Ile Lys Glu Thr Tyr Gln Xaa His  
 65 70 75 80  
 Arg Gly Arg Thr Arg Arg Trp Trp Glu Asn Val Gly Met Leu Leu Val  
 85 90 95  
 Pro Pro Gly Phe Leu Xaa Arg Arg Ser Cys Arg Ser Trp Cys Xaa Val  
 100 105 110  
 Val

<210> 1055  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 1055  
 Ile Leu  
 1

<210> 1056  
 <211> 161  
 <212> PRT  
 <213> Homo sapiens

<400> 1056  
 Met Ala Glu Ala Ser Cys Gly Val Phe Trp Leu Leu Ser Leu Leu Cys  
 1 5 10 15  
 Cys Ile Lys Glu Gln Gln Phe Glu Gln Val Val Ala Leu Leu Leu Gln  
 20 25 30  
 Ser Ile Arg Leu Cys Gln Asp Arg Ala Leu Leu Val Asn Asn Ala Tyr  
 35 40 45  
 Gln Gly Leu Ala Ser Leu Val Lys Val Ser Glu Leu Ala Ala Phe Lys  
 50 55 60  
 Val Val Val Gln Glu Glu Gly Gly Ser Gly Leu Ser Leu Ile Lys Glu  
 65 70 75 80  
 Thr Tyr Gln Leu His Arg Asp Asp Pro Glu Val Val Glu Asn Val Gly  
 85 90 95  
 Met Leu Leu Val His Leu Ala Ser Tyr Glu Glu Ile Leu Pro Glu Leu  
 100 105 110  
 Val Ser Ser Ser Met Lys Ala Leu Leu Gln Glu Ile Lys Glu Arg Phe  
 115 120 125  
 Thr Ser Ser Leu Glu Leu Val Ser Cys Val Glu Lys Val Leu Leu Arg

130	135	140
Leu Glu Ala Ala Thr Ser Pro Ser Pro Leu Gly Gly Glu Ala Ala Gln		
145	150	155 160

Pro

&lt;210&gt; 1057

&lt;211&gt; 491

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (42)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (43)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (44)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1057

Ala Ala Arg Val Gly Arg His Gly Arg Arg Arg Arg Ser Ala Ala Met
1 5 10 15

Ala Gly Arg Gly Gly Ser Ala Leu Leu Ala Leu Cys Gly Ala Leu Ala
20 25 30

Ala Cys Gly Trp Leu Leu Gly Ala Glu Xaa Xaa Xaa Pro Gly Ala Pro
35 40 45

Ala Ala Gly Met Arg Arg Arg Arg Arg Leu Gln Gln Glu Asp Gly Ile
50 55 60

Ser Phe Glu Tyr His Arg Tyr Pro Glu Leu Arg Glu Ala Leu Val Ser
65 70 75 80

Val Trp Leu Gln Cys Thr Ala Ile Ser Arg Ile Tyr Thr Val Gly Arg
85 90 95

Ser Phe Glu Gly Arg Glu Leu Leu Val Ile Glu Leu Ser Asp Asn Pro
100 105 110

Gly Val His Glu Pro Gly Glu Pro Glu Phe Lys Tyr Ile Gly Asn Met
115 120 125

His Gly Asn Glu Ala Val Gly Arg Glu Leu Leu Ile Phe Leu Ala Gln
130 135 140

Tyr Leu Cys Asn Glu Tyr Gln Lys Gly Asn Glu Thr Ile Val Asn Leu
145 150 155 160

Ile His Ser Thr Arg Ile His Ile Met Pro Ser Leu Asn Pro Asp Gly  
 165 170 175  
 Phe Glu Lys Ala Ala Ser Gln Pro Gly Glu Leu Lys Asp Trp Phe Val  
 180 185 190  
 Gly Arg Ser Asn Ala Gln Gly Ile Asp Leu Asn Arg Asn Phe Pro Asp  
 195 200 205  
 Leu Asp Arg Ile Val Tyr Val Asn Glu Lys Glu Gly Gly Pro Asn Asn  
 210 215 220  
 His Leu Leu Lys Asn Met Lys Lys Ile Val Asp Gln Asn Thr Lys Leu  
 225 230 235 240  
 Ala Pro Glu Thr Lys Ala Val Ile His Trp Ile Met Asp Ile Pro Phe  
 245 250 255  
 Val Leu Ser Ala Asn Leu His Gly Gly Asp Leu Val Ala Asn Tyr Pro  
 260 265 270  
 Tyr Asp Glu Thr Arg Ser Gly Ser Ala His Glu Tyr Ser Ser Ser Pro  
 275 280 285  
 Asp Asp Ala Ile Phe Gln Ser Leu Ala Arg Ala Tyr Ser Ser Phe Asn  
 290 295 300  
 Pro Ala Met Ser Asp Pro Asn Arg Pro Pro Cys Arg Lys Asn Asp Asp  
 305 310 315 320  
 Asp Ser Ser Phe Val Asp Gly Thr Thr Asn Gly Gly Ala Trp Tyr Ser  
 325 330 335  
 Val Pro Gly Gly Met Gln Asp Phe Asn Tyr Leu Ser Ser Asn Cys Phe  
 340 345 350  
 Glu Ile Thr Val Glu Leu Ser Cys Glu Lys Phe Pro Pro Glu Glu Thr  
 355 360 365  
 Leu Lys Thr Tyr Trp Glu Asp Asn Lys Asn Ser Leu Ile Ser Tyr Leu  
 370 375 380  
 Glu Gln Ile His Arg Gly Val Lys Gly Phe Val Arg Asp Leu Gln Gly  
 385 390 395 400  
 Asn Pro Ile Ala Asn Ala Thr Ile Ser Val Glu Gly Ile Asp His Asp  
 405 410 415  
 Val Thr Ser Ala Lys Asp Gly Asp Tyr Trp Arg Leu Leu Ile Pro Gly  
 420 425 430  
 Asn Tyr Lys Leu Thr Ala Ser Ala Pro Gly Tyr Leu Ala Ile Thr Lys  
 435 440 445  
 Lys Val Ala Val Pro Tyr Ser Pro Ala Ala Gly Val Asp Phe Glu Leu  
 450 455 460  
 Glu Ser Phe Ser Glu Arg Lys Glu Glu Glu Lys Glu Glu Leu Met Glu  
 465 470 475 480

Trp Trp Lys Met Met Ser Glu Thr Leu Asn Phe  
                   485                                  490

<210> 1058  
 <211> 79  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (21)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (49)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (65)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (66)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1058  
 Met Arg Leu Ala Ser Ser Leu Ser Val Phe Pro Leu Leu Pro Xaa Thr  
   1                  5                          10                  15

Cys Gly His Ser Xaa Ala Leu Leu Pro Ser Ser Ile Gly Gln His Ser  
                   20                          25                  30

Glu Thr Phe Thr Arg Cys Arg Pro Leu Thr Phe Pro Val Phe Arg Thr  
           35                          40                          45

Xaa Lys Pro Met Asn Pro Tyr Glu Ile Thr Gln Phe Cys Gly Ile Leu  
   50                          55                          60

Xaa Xaa Ala Thr Gln Thr Gly Leu Lys Thr Gly Thr Leu His Gly  
   65                          70                          75

<210> 1059  
 <211> 20  
 <212> PRT  
 <213> Homo sapiens

<400> 1059

Arg Glu Lys Ser Ser Leu Ser Val Pro Val Leu Val Cys Leu Cys Cys  
 1 5 10 15

Tyr Asn Arg Ile  
 20

<210> 1060

<211> 244

<212> PRT

<213> Homo sapiens

<400> 1060

Leu Val Pro Leu Val Phe Ser Leu Leu Val Gln Ser Cys Lys Gln Val  
 1 5 10 15

Tyr Arg Ser Ile Ala Met Lys Phe Val Pro Cys Leu Leu Leu Val Thr  
 20 25 30

Leu Ser Cys Leu Gly Thr Leu Gly Gln Ala Pro Arg Gln Lys Gln Gly  
 35 40 45

Ser Thr Gly Glu Glu Phe His Phe Gln Thr Gly Gly Arg Asp Ser Cys  
 50 55 60

Thr Met Arg Pro Ser Ser Leu Gly Gln Gly Ala Gly Glu Val Trp Leu  
 65 70 75 80

Arg Val Asp Cys Arg Asn Thr Asp Gln Thr Tyr Trp Cys Glu Tyr Arg  
 85 90 95

Gly Gln Pro Ser Met Cys Gln Ala Phe Ala Ala Asp Pro Lys Ser Tyr  
 100 105 110

Trp Asn Gln Ala Leu Gln Glu Leu Arg Arg Leu His His Ala Cys Gln  
 115 120 125

Gly Ala Pro Val Leu Arg Pro Ser Val Cys Arg Glu Ala Gly Pro Gln  
 130 135 140

Ala His Met Gln Gln Val Thr Ser Ser Leu Lys Gly Ser Pro Glu Pro  
 145 150 155 160

Asn Gln Gln Pro Glu Ala Gly Thr Pro Ser Leu Arg Pro Lys Ala Thr  
 165 170 175

Val Lys Leu Thr Glu Ala Thr Gln Leu Gly Lys Asp Ser Met Glu Glu  
 180 185 190

Leu Gly Lys Ala Lys Pro Thr Thr Arg Pro Thr Ala Lys Pro Thr Gln  
 195 200 205

Pro Gly Pro Arg Pro Gly Gly Asn Glu Glu Ala Lys Lys Lys Ala Trp  
 210 215 220

Glu His Cys Trp Lys Pro Phe Gln Ala Leu Cys Ala Phe Leu Ile Ser  
 225 230 235 240

Phe Phe Arg Gly

<210> 1061  
 <211> 70  
 <212> PRT  
 <213> Homo sapiens

<400> 1061  
 Met Arg Leu Ala Ser Ser Leu Ser Val Phe Pro Leu Leu Pro Leu Thr  
     1                    5                    10                    15  
 Cys Gly His Ser Leu Ala Leu Leu Pro Ser Ser Ile Gly Gln His Ser  
             20                    25                    30  
 Glu Thr Phe Thr Arg Cys Arg Pro Leu Thr Phe Pro Val Phe Arg Thr  
             35                    40                    45  
 Ile Asn Gln Val Asn Pro Tyr Lys Ser Pro Ser Leu Trp Tyr Ser Val  
             50                    55                    60  
 Ile Ala Thr Gln Thr Asp  
     65                    70

<210> 1062  
 <211> 304  
 <212> PRT  
 <213> Homo sapiens

<400> 1062  
 Thr Cys Pro Leu Leu Arg Asn Ser Ser His Ala Glu Pro Ala His Arg  
     1                    5                    10                    15  
 Gln Asp Gly Asp Leu Ala Leu Thr Pro Cys Leu Gly Pro Gly Leu Gly  
             20                    25                    30  
 Asn Pro Gly Arg Val Arg Gln Lys Ala Gly Asn Arg Ser Ser Gly Gly  
             35                    40                    45  
 Tyr Ser Leu Arg Gly Gln Gln His Leu Gly Pro Leu Leu Leu Ala Thr  
     50                    55                    60  
 Ala Gly Ala Ala Gly Ala Arg Glu Arg Gly Gln Ala Leu His Gly Val  
     65                    70                    75                    80  
 Glu Met Val Ala Val Arg Ala Asp Val Trp His Val Arg Gly Arg Trp  
             85                    90                    95  
 Arg Gln Leu Gly His Arg Pro Val Ala Arg Leu His Gln Leu Phe Ala  
             100                    105                    110  
 Val Val Leu Phe Gln Gln Leu Leu Gln Gly Arg Ser Ile Leu Phe Leu  
     115                    120                    125  
 Leu Cys Asp Gln Ala His Gln Asp Pro Asn Gly Val Leu Ile Gly Ile  
     130                    135                    140



Leu Ser Pro Val Gly Arg Val Asp Ser Thr Ala Ser Thr Ser Arg Ala  
 145 150 155 160  
 Gly Pro Asp Leu Leu Val Arg Arg Ala Val Val Ala Leu Pro Leu Glu  
 165 170 175  
 Glu Val Ala His Gln Asp Ala Gln Gln Pro His Glu Ala Glu Asp Arg  
 180 185 190  
 Asp Asp Gly Asp Asp Arg Val Leu Gly Gly Cys Leu Leu Trp Ala Thr  
 195 200 205  
 Cys Pro Gly Ala Val Pro Arg Leu Pro Cys Leu Thr Thr Ala Ala Gly  
 210 215 220  
 Pro Cys Cys His Leu His Ala Thr Ser Gly Pro Pro Pro Pro Leu Ile  
 225 230 235 240  
 Thr Ala Met Ser Thr Gln Arg Cys Pro Gly Thr Trp Leu Thr Trp Asn  
 245 250 255  
 Ala Gly Asn Pro Pro Arg Pro Lys Pro Pro Arg Pro Ala Val Ser Thr  
 260 265 270  
 Glu Cys Ile Ser Ser Cys His Ala His Leu Gly Leu Gln Pro Pro Pro  
 275 280 285  
 Lys Ala Ala Thr Gly Met Gly Leu Ala Trp Ala Gly Ala Pro Cys Ser  
 290 295 300

<210> 1063  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<400> 1063  
 Met Gly Gly Cys Leu Leu Ser Leu Ser Leu Cys Phe Val Pro Val Val  
 1 5 10 15  
 Arg Leu Ala Ala Ser Val Ala Arg Trp Ala Trp Leu Glu Pro Trp Val  
 20 25 30  
 Arg Gln Val Ala Gly Gly Asp Arg Glu Arg Leu Arg Gly Lys Trp Trp  
 35 40 45  
 His Leu Leu Leu  
 50

<210> 1064  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1064

Met Gly Gly Cys Leu Leu Ser Leu Ser Leu Cys Phe Val Pro Val Val  
 1 5 10 15

Arg Leu Ala Ala Ser Val Ala Arg Trp Ala Trp Leu Glu Pro Trp Val  
 20 25 30

Arg Gln Val Ala Gly Gly Asp Arg Glu Arg Leu Arg Gly Lys Trp Trp  
 35 40 45

His Leu Leu Leu  
 50

&lt;210&gt; 1065

&lt;211&gt; 58

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1065

Asp Leu Ser Gly Gly Glu Trp Asn Val Thr Thr Arg Thr Arg Leu Trp  
 1 5 10 15

Glu Ile Gln Pro His Leu Cys Phe Val Met Ile Leu Lys Leu Asp Phe  
 20 25 30

Ser Cys Arg Asp Phe Leu Ser Ile Leu Pro Gly Val Leu Thr Tyr Ser  
 35 40 45

Leu Pro Val Lys Arg Phe Lys Lys Lys Asn  
 50 55

&lt;210&gt; 1066

&lt;211&gt; 21

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1066

Cys Phe Phe Gln Leu Ser Pro Glu Glu Val Ser Trp Cys Pro Asn Val  
 1 5 10 15

Gly Ser Ser Phe Asp  
 20

&lt;210&gt; 1067

&lt;211&gt; 37

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (5)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1067

Met Gly Lys Leu Xaa Leu Thr Leu Leu Leu Cys Leu Leu Gln Leu Leu  
 1 5 10 15  
 Pro Pro Glu Val Tyr Tyr Ser Arg Trp Gly Ala Asn Met Met Ala Gln  
 20 25 30  
 Thr Pro Leu Asn Pro  
 35

<210> 1068  
 <211> 62  
 <212> PRT  
 <213> Homo sapiens

<400> 1068  
 Met Gly Lys Leu Thr Leu Thr Leu Leu Leu Cys Leu Leu Gln Leu Leu  
 1 5 10 15  
 Pro Pro Glu Val Tyr Tyr Ser Arg Trp Gly Ala Asn Met Met Ala Gln  
 20 25 30  
 Thr Pro Leu Asn Ser Met Arg Ser Pro Trp Pro Met Glu Ile Leu Leu  
 35 40 45  
 Phe Phe Pro Leu Phe Ser Ser Ser Val Phe Ile Gly Ser Ala  
 50 55 60

<210> 1069  
 <211> 63  
 <212> PRT  
 <213> Homo sapiens

<400> 1069  
 Met Ser Leu Asp Ser Leu Val Leu Val Lys Ala Leu Phe Cys Phe Thr  
 1 5 10 15  
 Phe Val Val Gln Ile Thr Leu Ser Asn Ile Ser Ser Thr Asn Val Ser  
 20 25 30  
 Ile Leu Val Phe Val His Thr Ala Ile Thr Ser Pro Leu Gln Thr Phe  
 35 40 45  
 Gln Phe Trp His Tyr Glu Glu Val Ala Val Asn Leu Lys Tyr Leu  
 50 55 60

<210> 1070  
 <211> 63  
 <212> PRT  
 <213> Homo sapiens

<400> 1070  
 Met Ser Leu Asp Ser Leu Val Leu Val Lys Ala Leu Phe Cys Phe Thr  
 1 5 10 15

Phe Val Val Gln Ile Thr Leu Ser Asn Ile Ser Ser Thr Asn Val Ser  
                   20                                  25                                  30

Ile Leu Val Phe Val His Thr Ala Ile Thr Ser Pro Leu Gln Thr Phe  
                   35                                  40                                  45

Gln Phe Trp His Tyr Glu Glu Val Ala Val Asn Leu Lys Tyr Leu  
                   50                                  55                                  60

<210> 1071  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 1071  
 Leu Gln  
       1

<210> 1072  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 1072  
 Leu Gln  
       1

<210> 1073  
 <211> 48  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (38)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (42)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (44)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1073  
 Met Gly Leu Arg Gln Gln Leu Glu Leu Lys Leu Lys Leu Ile Leu Leu  
       1                                  5                                  10                                  15

Leu Cys Val Phe Trp Phe Lys Ser Cys Thr Tyr Ile Leu Ala Leu Leu  
                   20                                  25                                  30

Phe Leu Tyr Ser Gly Xaa Met Trp Val Xaa His Xaa Gly Arg Lys Ile  
35 40 45

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<210> 1074
<211> 261
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (90)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (93)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (169)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (237)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (239)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (240)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (253)
<223> Xaa equals any of the naturally occurring L-amino acids

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<400> 1074
Thr Val Ala Asp Val Arg Arg Pro Phe Ala Gln Val Asn Val Leu Ala
 1          5          10          15
Glu Glu Val Leu Ile Tyr Arg Ile Val Leu Asn Asp Ile Val Gly Asp
 20          25          30
Val Val Gln Asp His Gln Val Arg Leu Arg Arg Lys Asp Asp Ala Val
 35          40          45
Ile Arg Gln Leu Glu Ala Thr Met Leu Val Gly Arg Lys His Arg His
 50          55          60

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Gly Asp Val Leu Val Arg Glu Thr Thr Val Ser Asp Ala Arg Pro Glu  
 65 70 75 80  
 Asp Arg Val His Phe Arg His Val Cys Xaa Pro Gln Xaa Lys Arg Val  
 85 90 95  
 Ser Leu Leu Asp Val Val Ile Ala Ala His Arg Leu Ile His Thr Lys  
 100 105 110  
 Gly Thr His Lys Ala Asn Tyr Cys Arg Arg His Thr Val Thr Arg Val  
 115 120 125  
 Arg Val Asp Val Val Arg Thr Glu Ala Arg Phe Lys Gln Leu Gly Arg  
 130 135 140  
 Gly Ile Thr Phe Pro Asp Ser Pro Leu Thr Arg Thr Glu His Thr Asp  
 145 150 155 160  
 Arg Phe Arg Pro Phe Phe Phe Gln Xaa Gly Phe Glu Phe Leu Phe His  
 165 170 175  
 His Ile Glu Gly Leu Ile Pro Gly Asp Trp Gly Lys Phe Ala Phe Phe  
 180 185 190  
 Val Ile Phe Thr Val Phe His Thr Gln Gln Arg Leu Arg Gln Thr Val  
 195 200 205  
 Phe Thr Val His Asp Phe Gly Gln Glu Ile Ala Leu Asn Ala Val Gln  
 210 215 220  
 Ala Thr Val Asn Arg Cys Val Arg Val Ala Leu Thr Xaa Gln Xaa Xaa  
 225 230 235 240  
 Val Pro Ala Ala Phe Arg Pro Glu Arg Arg Asn Gln Xaa Arg Arg Thr  
 245 250 255  
 Thr Gln Phe Ala Ile  
 260

&lt;210&gt; 1075

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1075

Phe Tyr Thr Asn Val Thr Tyr Lys Ser Asp Ala Thr Thr Leu Arg Phe  
 1 5 10 15  
 Pro Gly Arg Cys Asp Phe Ser Ser Ala Trp Glu Val Asp Leu His Gln  
 20 25 30  
 Pro Phe Gln Cys Ser Ala His Pro Gly Ala Gly Ile Thr Ala Pro His  
 35 40 45  
 Leu Leu Gly Glu Lys Pro Gly Arg Pro Glu Glu Val Gly  
 50 55 60

&lt;210&gt; 1076

&lt;211&gt; 54

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1076

Met Gly Leu Arg Gln Gln Leu Glu Leu Lys Leu Lys Leu Ile Leu Leu  
 1 5 10 15

Leu Cys Val Phe Trp Phe Lys Ser Cys Thr Tyr Ile Leu Ala Leu Leu  
 20 25 30

Phe Ser Val Val Pro Glu Arg Trp Trp Val Ala Ile Leu Val Gly Lys  
 35 40 45

Ser Glu Phe Ser Tyr Leu  
 50

&lt;210&gt; 1077

&lt;211&gt; 5

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1077

Gln Tyr Leu Leu Ile  
 1 5

&lt;210&gt; 1078

&lt;211&gt; 30

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (2)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (13)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (16)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1078

Met Xaa Ala Ser Gln Tyr Ile Leu Phe Phe Leu Gln Xaa Leu Gly Xaa  
 1 5 10 15

Lys Leu Gln Phe Gln Gly Ile Ser Ser Gln Gln Gln Val Glu  
 20 25 30

<210> 1079  
 <211> 30  
 <212> PRT  
 <213> Homo sapiens

<400> 1079  
 Met Arg Ala Ser Gln Tyr Ile Leu Phe Phe Leu Gln Phe Leu Gly Phe  
           1                  5                  10                  15  
 Lys Leu Gln Phe Gln Gly Ile Ser Ser Gln Gln Gln Val Glu  
                   20                  25                  30

<210> 1080  
 <211> 7  
 <212> PRT  
 <213> Homo sapiens

<400> 1080  
 Met Phe Gly Cys Pro Phe Cys  
           1                  5

<210> 1081  
 <211> 261  
 <212> PRT  
 <213> Homo sapiens

<400> 1081  
 Gly Ile Phe Arg Ser Leu Arg Val Leu Phe Pro Leu Phe Ser Val Gly  
           1                  5                  10                  15  
 Arg Pro Gln Phe Ala Arg Ser Leu Ser Ala Ala Pro Gln Leu Ser Asp  
                   20                  25                  30  
 Thr Ala Asp Thr Met Gly Phe Gly Asp Leu Lys Ser Pro Ala Gly Leu  
           35                  40                  45  
 Gln Val Leu Asn Asp Tyr Leu Ala Asp Lys Ser Tyr Ile Glu Gly Tyr  
           50                  55                  60  
 Val Pro Ser Gln Ala Asp Val Ala Val Phe Glu Ala Val Ser Ser Pro  
           65                  70                  75                  80  
 Pro Pro Ala Asp Leu Cys His Ala Leu Arg Trp Tyr Asn His Ile Lys  
                   85                  90                  95  
 Ser Tyr Glu Lys Glu Lys Ala Ser Leu Pro Gly Val Lys Lys Ala Leu  
           100                  105                  110  
 Gly Lys Tyr Gly Pro Ala Asp Val Glu Asp Thr Thr Gly Ser Gly Ala  
           115                  120                  125  
 Thr Asp Ser Lys Asp Asp Asp Asp Ile Asp Leu Phe Gly Ser Asp Asp  
           130                  135                  140



MISSING AT THE TIME OF PUBLICATION

Gly Gly Glu Arg His Leu His Arg Thr His Pro Arg Leu Pro Gly His  
 1 5 10 15  
 Arg Phe Leu Arg Leu His Arg Ala Pro Arg Val Pro His Val Cys Gly  
 20 25 30  
 Val Arg Ala His Gly Ala Gly Val Pro His Leu Val Ser Gly Gly Asp  
 35 40 45  
 Glu Val Ser Pro Gly Gly Ala Gly Pro Val Ser His Ser Ala Glu Glu  
 50 55 60  
 Gln Pro Val His Gln Val Asp Arg Leu Cys Gly Ala Cys Pro Gly Gln  
 65 70 75 80  
 Arg Val Phe Leu Cys Pro Gly Glu Pro Gly Ala Lys Ser Gly Arg His  
 85 90 95  
 Leu Ser Gly Gly Val Pro Pro Tyr Thr Glu Cys Asp His Ala Gln Pro  
 100 105 110  
 Leu Ala Arg Pro Gly Ala Val Glu Ser Cys Asn His Glu Val Cys Ala  
 115 120 125  
 Gln Thr Gly Glu Thr Val Gln Pro Leu Met Ala Arg Arg  
 130 135 140

<210> 1085  
 <211> 45  
 <212> PRT  
 <213> Homo sapiens

<400> 1085  
 Met Ser Met Lys Cys Tyr Leu Val Val Leu Ile Cys Ile Pro Leu Met  
 1 5 10 15  
 Ala Thr Asp Ala Glu Cys Leu Phe Leu Cys Leu Arg Ala Met Arg Ile  
 20 25 30  
 Ser Leu Glu Lys Gly Leu Ser Arg Ser Phe Ala Tyr Phe  
 35 40 45

<210> 1086  
 <211> 136  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (1)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
 <220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (8)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (14)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1086

Xaa	Tyr	Xaa	Ser	Cys	Arg	Lys	Xaa	Tyr	Leu	Thr	Tyr	Gly	Xaa	Asn	Ser
1				5					10					15	

Arg	Val	Asp	Pro	Arg	Val	Arg	His	Val	Cys	Gly	Val	Arg	Ala	His	Gly
		20						25					30		

Ala	Gly	Val	Pro	His	Leu	Val	Ser	Gly	Gly	Asp	Glu	Val	Ser	Pro	Gly
		35					40					45			

Gly	Ala	Gly	Pro	Val	Ser	His	Ser	Ala	Glu	Glu	Gln	Pro	Val	His	Gln
50						55					60				

Val	Asp	Arg	Leu	Cys	Gly	Ala	Cys	Pro	Gly	Gln	Arg	Val	Phe	Leu	Cys
65					70					75					80

Pro	Gly	Glu	Pro	Gly	Ala	Lys	Ser	Gly	Arg	His	Leu	Ser	Gly	Gly	Val
				85					90					95	

Pro	Pro	Tyr	Thr	Glu	Cys	Asp	His	Ala	Gln	Pro	Leu	Ala	Arg	Pro	Gly
			100					105					110		

Ala	Val	Glu	Ser	Cys	Asn	His	Glu	Val	Cys	Ala	Gln	Thr	Gly	Glu	Thr
		115					120					125			

Val	Gln	Pro	Leu	Met	Ala	Arg	Arg
130						135	

&lt;210&gt; 1087

&lt;211&gt; 45

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1087

Met	Ser	Met	Lys	Cys	Tyr	Leu	Val	Val	Leu	Ile	Cys	Ile	Pro	Leu	Met
1				5					10					15	

Ala	Thr	Asp	Ala	Glu	Cys	Leu	Phe	Leu	Cys	Leu	Arg	Ala	Met	Arg	Ile
		20						25					30		

Ser	Leu	Glu	Lys	Gly	Leu	Ser	Arg	Ser	Phe	Ala	Tyr	Phe
	35					40						45

&lt;210&gt; 1088

&lt;211&gt; 177

<212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (90)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (173)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1088

Leu Asp Ile Lys Val Leu Gln Val Pro Thr Arg Leu Arg Ser Pro Ala  
 1 5 10 15

Gly Phe Thr Gln Trp Ile Gln His Trp Gly Ser Arg Trp Ser Cys Leu  
 20 25 30

Pro Val Pro Arg Cys Ala Pro Ala Leu Leu Ser Pro Trp Val Val Asp  
 35 40 45

Gly Thr Gly Arg Cys Gly Ala Gly Gly Gly Ala Pro Trp Gly Gly Ser  
 50 55 60

Gly Arg Thr Gly Ala His Gly Gly Trp Gly Glu Gly Gln Ala Trp Arg  
 65 70 75 80

Ala Ala Gly Pro Glu Pro Cys Pro Ala Xaa Arg Gln Leu Arg Pro Ser  
 85 90 95

Glu Lys Ser Ser Thr Ala Ala Ala Gly Pro Gly Ala Lys Ala Leu Thr  
 100 105 110

Ala Trp Gly Arg Pro Ala Ala Leu Ser Gly Ala Pro Pro Ser Pro Arg  
 115 120 125

Pro Pro Gly Thr His Ser Gly Pro Gln Ala Leu Arg Ala Ala Pro Val  
 130 135 140

Pro Ala Arg Pro Ser Pro Ser Ala Pro Pro Arg Lys Leu Arg Glu Leu  
 145 150 155 160

Ala Pro Ala Leu Ala Ser Pro Glu Arg Gly Ser Tyr Xaa Ala Ala Ala  
 165 170 175

Gly

<210> 1089  
 <211> 414  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (174)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (410)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1089

Met Glu Arg Ala Val Arg Val Glu Ser Gly Val Leu Val Gly Val Val  
1 5 10 15

Cys Leu Leu Leu Ala Cys Pro Ala Thr Ala Thr Gly Pro Glu Val Ala  
20 25 30

Gln Pro Glu Val Asp Thr Thr Leu Gly Arg Val Arg Gly Arg Gln Val  
35 40 45

Gly Val Lys Gly Thr Asp Arg Leu Val Asn Val Phe Leu Gly Ile Pro  
50 55 60

Phe Ala Gln Pro Pro Leu Gly Pro Asp Arg Phe Ser Ala Pro His Pro  
65 70 75 80

Ala Gln Pro Trp Glu Gly Val Arg Asp Ala Ser Thr Ala Pro Pro Met  
85 90 95

Cys Leu Gln Asp Val Glu Ser Met Asn Ser Ser Arg Phe Val Leu Asn  
100 105 110

Gly Lys Gln Gln Ile Phe Ser Val Ser Glu Asp Cys Leu Val Leu Asn  
115 120 125

Val Tyr Ser Pro Ala Glu Val Pro Ala Gly Ser Gly Arg Pro Val Met  
130 135 140

Val Trp Val His Gly Gly Ala Leu Ile Thr Gly Ala Ala Thr Ser Tyr  
145 150 155 160

Asp Gly Ser Ala Leu Ala Ala Tyr Gly Asp Val Val Val Xaa Thr Val  
165 170 175

Gln Tyr Arg Leu Gly Val Leu Gly Phe Phe Ser Thr Gly Asp Glu His  
180 185 190

Ala Pro Gly Asn Gln Gly Phe Leu Asp Val Val Ala Ala Leu Arg Trp  
195 200 205

Val Gln Glu Asn Ile Ala Pro Phe Gly Gly Asp Leu Asn Cys Val Thr  
210 215 220

Val Phe Gly Gly Ser Ala Gly Gly Ser Ile Ile Ser Gly Leu Val Leu  
225 230 235 240

Ser Pro Val Ala Ala Gly Leu Phe His Arg Ala Ile Thr Gln Ser Gly  
245 250 255

Val Ile Thr Thr Pro Gly Ile Ile Asp Ser His Pro Trp Pro Leu Ala  
260 265 270

Gln Lys Ile Ala Asn Thr Leu Ala Cys Ser Ser Ser Ser Pro Ala Glu

275	280	285
Met Val Gln Cys Leu Gln Gln Lys Glu Gly Glu Glu Leu Val Leu Ser		
290	295	300
Lys Lys Leu Lys Asn Thr Ile Tyr Pro Leu Thr Val Asp Gly Thr Val		
305	310	315
Phe Pro Lys Ser Pro Lys Glu Leu Leu Lys Glu Lys Pro Phe His Ser		
325	330	335
Val Pro Phe Leu Met Gly Val Asn Asn His Glu Phe Ser Trp Leu Ile		
340	345	350
Pro Arg Gly Trp Gly Leu Leu Asp Thr Met Glu Gln Met Ser Arg Glu		
355	360	365
Asp Met Leu Ala Ile Ser Thr Pro Val Leu Thr Ser Leu Asp Val Pro		
370	375	380
Pro Glu Met Met Pro Thr Val Ile Asp Glu Tyr Leu Gly Ser Asn Ser		
385	390	395
Asp Ala Gln Ala Lys Cys Gln Ala Phe Xaa Gly Ile His Gly		
405	410	

&lt;210&gt; 1090

&lt;211&gt; 571

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1090

Met Glu Arg Ala Val Arg Val Glu Ser Gly Val Leu Val Gly Val Val		
1	5	10
Cys Leu Leu Leu Ala Cys Pro Ala Thr Ala Thr Gly Pro Glu Val Ala		
20	25	30
Gln Pro Glu Val Asp Thr Thr Leu Gly Arg Val Arg Gly Arg Gln Val		
35	40	45
Gly Val Lys Gly Thr Asp Arg Leu Val Asn Val Phe Leu Gly Ile Pro		
50	55	60
Phe Ala Gln Pro Pro Leu Gly Pro Asp Arg Phe Ser Ala Pro His Pro		
65	70	75
Ala Gln Pro Trp Glu Gly Val Arg Asp Ala Ser Thr Ala Pro Pro Met		
85	90	95
Cys Leu Gln Asp Val Glu Ser Met Asn Ser Ser Arg Phe Val Leu Asn		
100	105	110
Gly Lys Gln Gln Ile Phe Ser Val Ser Glu Asp Cys Leu Val Leu Asn		
115	120	125
Val Tyr Ser Pro Ala Glu Val Pro Ala Gly Ser Gly Arg Pro Val Met		
130	135	140

Val Trp Val His Gly Gly Ala Leu Ile Thr Gly Ala Ala Thr Ser Tyr  
 145 150 155 160  
 Asp Gly Ser Ala Leu Ala Ala Tyr Gly Asp Val Val Val Val Thr Val  
 165 170 175  
 Gln Tyr Arg Leu Gly Val Leu Gly Phe Phe Ser Thr Gly Asp Glu His  
 180 185 190  
 Ala Pro Gly Asn Gln Gly Phe Leu Asp Val Val Ala Ala Leu Arg Trp  
 195 200 205  
 Val Gln Glu Asn Ile Ala Pro Phe Gly Gly Asp Leu Asn Cys Val Thr  
 210 215 220  
 Val Phe Gly Gly Ser Ala Gly Gly Ser Ile Ile Ser Gly Leu Val Leu  
 225 230 235 240  
 Ser Pro Val Ala Ala Gly Leu Phe His Arg Ala Ile Thr Gln Ser Gly  
 245 250 255  
 Val Ile Thr Thr Pro Gly Ile Ile Asp Ser His Pro Trp Pro Leu Ala  
 260 265 270  
 Gln Lys Ile Ala Asn Thr Leu Ala Cys Ser Ser Ser Ser Pro Ala Glu  
 275 280 285  
 Met Val Gln Cys Leu Gln Gln Lys Glu Gly Glu Glu Leu Val Leu Ser  
 290 295 300  
 Lys Lys Leu Lys Asn Thr Ile Tyr Pro Leu Thr Val Asp Gly Thr Val  
 305 310 315 320  
 Phe Pro Lys Ser Pro Lys Glu Leu Leu Lys Glu Lys Pro Phe His Ser  
 325 330 335  
 Val Pro Phe Leu Met Gly Val Asn Asn His Glu Phe Ser Trp Leu Ile  
 340 345 350  
 Pro Arg Gly Trp Gly Leu Leu Asp Thr Met Glu Gln Met Ser Arg Glu  
 355 360 365  
 Asp Met Leu Ala Ile Ser Thr Pro Val Leu Thr Ser Leu Asp Val Pro  
 370 375 380  
 Pro Glu Met Met Pro Thr Val Ile Asp Glu Tyr Leu Gly Ser Asn Ser  
 385 390 395 400  
 Asp Ala Gln Ala Lys Cys Gln Ala Phe Gln Glu Phe Met Gly Asp Val  
 405 410 415  
 Phe Ile Asn Val Pro Thr Val Ser Phe Ser Arg Tyr Leu Arg Asp Ser  
 420 425 430  
 Gly Ser Pro Val Phe Phe Tyr Glu Phe Gln His Arg Pro Ser Ser Phe  
 435 440 445  
 Ala Lys Ile Lys Pro Ala Trp Val Lys Ala Asp His Gly Ala Glu Gly  
 450 455 460

Ala Phe Val Phe Gly Gly Pro Phe Leu Met Asp Glu Ser Ser Arg Leu  
 465 470 475 480

Ala Phe Pro Glu Ala Thr Glu Glu Glu Lys Gln Leu Ser Leu Thr Met  
 485 490 495

Met Ala Gln Trp Thr His Phe Ala Arg Thr Gly Asp Pro Asn Ser Lys  
 500 505 510

Ala Leu Pro Pro Trp Pro Gln Phe Asn Gln Ala Glu Gln Tyr Leu Glu  
 515 520 525

Ile Asn Pro Val Pro Arg Ala Gly Gln Lys Phe Arg Glu Ala Trp Met  
 530 535 540

Gln Phe Trp Ser Glu Thr Leu Pro Ser Lys Ile Gln Gln Trp His Gln  
 545 550 555 560

Lys Gln Lys Asn Arg Lys Ala Gln Glu Asp Leu  
 565 570

<210> 1091  
 <211> 68  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (68)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1091  
 Met Ile Ser Ser Leu Leu Ser Lys Ala Val Leu Ser Leu Trp Ile Ser  
 1 5 10 15

Val Phe Ser Trp Asn Val Leu Gly Cys Lys Lys Leu Lys Thr Ile Ile  
 20 25 30

Leu Gln Cys Phe Lys Glu Ala Ser Asp Leu Val Leu Arg Glu Arg Tyr  
 35 40 45

Leu Gly Val Val Gln Ala Leu Ser Asp Asp Phe Ser Phe Cys Phe Thr  
 50 55 60

Ile Leu Ser Xaa  
 65

<210> 1092  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 1092  
 Val Ser Lys Leu Phe Asp Leu Val Arg Val Ala Leu Trp Glu Ser Thr  
 1 5 10 15



Phe Leu Ser Leu Ser Leu Ser Val Pro Ser Val Cys Ala Met Phe Arg  
                   20                  25                  30  
 Ser Ser Glu Glu Ser Lys Ile Ser Ser Glu Phe Lys Ile Ile Phe Val  
           35                  40                  45  
 Phe Leu Leu Phe Asn Val Met Glu  
       50                  55

<210> 1093  
 <211> 66  
 <212> PRT  
 <213> Homo sapiens

<400> 1093  
 Met Ile Ser Ser Leu Leu Ser Lys Ala Val Leu Ser Leu Trp Ile Ser  
   1                  5                  10                  15  
 Val Phe Ser Trp Asn Val Leu Gly Cys Lys Lys Leu Lys Thr Ile Ile  
           20                  25                  30  
 Leu Gln Cys Phe Lys Glu Ala Ser Asp Leu Phe Leu Arg Glu Arg Tyr  
           35                  40                  45  
 Leu Gly Val Val Gln Ser Leu Ser Asp Asp Phe Phe Phe Leu Leu His  
       50                  55                  60  
 His Pro  
       65

<210> 1094  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (15)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1094  
 Arg Trp Arg Gly Ala Ser Thr Pro His Arg Asp Tyr Leu Ser Xaa Arg  
   1                  5                  10                  15  
 Tyr Cys Ala Cys Gly  
           20

<210> 1095  
 <211> 11  
 <212> PRT  
 <213> Homo sapiens

<400> 1095

Trp Gln Ile Leu Leu Ile Ala Leu Leu Ile  
 1 5 10

<210> 1096  
 <211> 38  
 <212> PRT  
 <213> Homo sapiens

<400> 1096  
 Met Leu Arg Trp Arg Leu Leu Ala Thr Ala Leu Ile Ala Leu Cys Arg  
 1 5 10 15  
 Arg Ser Ala Ser Ser Val Ala Ser Gly Glu Pro Pro Asp Ser Pro Pro  
 20 25 30  
 Cys Pro Trp Arg Arg Arg  
 35

<210> 1097  
 <211> 76  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (62)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (70)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (71)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (74)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1097  
 Met Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile Leu Cys Val Arg  
 1 5 10 15  
 Leu Ala Val Leu Leu Ala Val Thr Leu Thr Val Pro Val Val Leu Phe  
 20 25 30  
 Pro Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro Gly Lys Ala Phe  
 35 40 45  
 Ser Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu Leu Xaa Leu Val  
 50 55 60

Asn Val Leu Ala Ser Xaa Xaa Gln Pro Xaa Gly Ile  
 65 70 75

<210> 1098

<211> 54

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (26)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (27)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (36)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (40)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (44)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (47)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (49)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1098

Met Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile Leu Cys Val Pro  
 1 5 10 15

Pro Gly Arg Ala Ala Arg Gly Asp Pro Xaa Xaa Ala Ser Arg Ala Gly  
 20 25 30

Pro Tyr Pro Xaa Gly Pro Ala Xaa Ala Ala Phe Xaa Arg Gln Xaa Leu  
 35 40 45

Xaa Leu Gly Thr Thr Trp  
 50

<210> 1099  
 <211> 148  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (2)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (17)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1099  
 Leu Xaa Met Tyr Ser Gln Lys Asp Pro Leu Ile Leu Cys Val Arg Leu  
   1                  5                  10                  15  
 Xaa Val Leu Leu Ala Val Thr Leu Thr Val Pro Val Val Leu Phe Pro  
                   20                  25                  30  
 Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro Gly Lys Ala Phe Ser  
           35                  40                  45  
 Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu Leu Val Leu Val Asn  
       50                  55                  60  
 Val Leu Val Ile Cys Val Pro Thr Ile Arg Asp Ile Phe Gly Val Ile  
   65                  70                  75                  80  
 Gly Ser Thr Ser Ala Pro Ser Leu Ile Phe Ile Leu Pro Ser Ile Phe  
                   85                  90                  95  
 Tyr Leu Arg Ile Val Pro Ser Glu Val Glu Pro Phe Leu Ser Trp Pro  
           100                  105                  110  
 Lys Ile Gln Ala Leu Cys Phe Gly Val Leu Gly Val Leu Phe Met Ala  
       115                  120                  125  
 Val Ser Leu Gly Phe Met Phe Ala Asn Trp Ala Thr Gly Gln Ser Arg  
       130                  135                  140  
 Met Ser Gly His  
 145

<210> 1100  
 <211> 149  
 <212> PRT  
 <213> Homo sapiens

<400> 1100  
 Met Leu His Met Tyr Ser Gln Lys Asp Pro Leu Ile Leu Cys Val Arg  
   1                  5                  10                  15  
 Leu Ala Val Leu Leu Ala Val Thr Leu Thr Val Pro Val Val Leu Phe  
                   20                  25                  30

Pro Ile Arg Arg Ala Leu Gln Gln Leu Leu Phe Pro Gly Lys Ala Phe  
           35                                  40                                  45  
 Ser Trp Pro Arg His Val Ala Ile Ala Leu Ile Leu Leu Val Leu Val  
           50                                  55                                  60  
 Asn Val Leu Val Ile Cys Val Pro Thr Ile Arg Asp Ile Phe Gly Val  
           65                                  70                                  75                                  80  
 Ile Gly Ser Thr Ser Ala Pro Ser Leu Ile Phe Ile Leu Pro Ser Ile  
                                   85                                  90                                  95  
 Phe Tyr Leu Arg Ile Val Pro Ser Glu Val Glu Pro Phe Leu Ser Trp  
                                   100                                  105                                  110  
 Pro Lys Ile Gln Ala Leu Cys Phe Gly Val Leu Gly Val Leu Phe Met  
           115                                  120                                  125  
 Ala Val Ser Leu Gly Phe Met Phe Ala Asn Trp Ala Thr Gly Gln Ser  
           130                                  135                                  140  
 Arg Met Ser Gly His  
 145

<210> 1101  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<400> 1101  
 Met Ile Leu Arg Gly Val Tyr Ser Met Val Pro Ile Tyr Thr His Met  
   1                                  5                                  10                                  15  
 Ile Phe Leu Phe Thr Phe Phe Leu Thr Ile Ser Gly Lys Tyr Phe Lys  
                                   20                                  25                                  30  
 Ile Phe Glu Lys His Ser Arg Ile  
           35                                  40

<210> 1102  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<400> 1102  
 Met Ile Leu Arg Gly Val Tyr Ser Met Val Pro Ile Tyr Thr His Met  
   1                                  5                                  10                                  15  
 Ile Phe Leu Phe Thr Phe Phe Leu Thr Ile Ser Gly Lys Tyr Phe Lys  
                                   20                                  25                                  30  
 Ile Phe Glu Lys His Ser Arg Ile  
           35                                  40

<210> 1103  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 1103  
 Met Asn Leu Trp Leu Gly Ala Leu Ile Pro Val Thr Val His Leu Lys  
     1                    5                    10                    15  
 Arg Met Trp Ser His Pro Lys Phe Gln Ala Gln Lys Thr Phe Pro Leu  
             20                    25                    30  
 Ser Lys Ser Pro Lys Tyr His Pro Val Phe Leu Leu Val Ile Ile Met  
             35                    40                    45  
 Ala Arg Ser Ser Gln Leu Lys Arg  
     50                    55

<210> 1104  
 <211> 106  
 <212> PRT  
 <213> Homo sapiens

<400> 1104  
 Gln Gly Phe Ile Phe Trp Thr Gln Tyr Asn Ile Gly Tyr Ile Ser Leu  
     1                    5                    10                    15  
 Arg Ser Ile Gly Phe Gln His Lys Ser Leu Pro Ile Arg Lys Ser Lys  
             20                    25                    30  
 Trp Arg Lys His Gln Ile Ile Ile Ile Thr Gln Gln Lys Cys Gly  
     35                    40                    45  
 Asp Trp Gln Trp Phe Trp Gly Phe Ile Ser Ser Ile Arg Ala Ser Ala  
     50                    55                    60  
 Ser His Phe Met Lys Leu Leu Pro Ser Glu Arg Thr Leu Asn Thr Pro  
     65                    70                    75                    80  
 Arg Ser Tyr Cys Ser Phe Phe Leu Asn Gly Ile Leu Lys Asn Trp Leu  
             85                    90                    95  
 Lys Arg Glu Glu His Ser Lys Tyr Ile Leu  
     100                    105

<210> 1105  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 1105  
 Met Asn Leu Trp Leu Gly Ala Leu Ile Pro Val Thr Val His Leu Lys  
     1                    5                    10                    15  
 Arg Met Trp Ser His Pro Lys Phe Gln Ala Gln Lys Thr Phe Pro Leu  
             20                    25                    30

Ser Lys Ser Pro Lys Tyr His Pro Val Phe Leu Leu Val Ile Ile Met  
           35                                  40                                  45

Ala Arg Ser Ser Gln Leu Lys Arg  
       50                                  55

<210> 1106  
 <211> 116  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (14)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (25)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (33)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1106  
 Val Gly Phe Gln Gly Leu Glu Gly Asn Pro Pro Pro Ala Xaa Leu Asn  
       1                                  5                                  10                                  15

Gly Leu Glu Gly Lys Gly Lys Leu Xaa Lys Lys Ala Gln Gly Thr Gly  
                                   20                                  25                                  30

Xaa Lys Ile Ile Phe Trp Pro Lys Glu Ser Lys Thr Pro Ser Gly Ser  
           35                                  40                                  45

Pro Lys Pro Ala Lys Ala Ala Asn Ser Lys Ser Lys Glu Ser Asp Glu  
       50                                  55                                  60

Pro His His Ser Lys Asn Glu Arg Pro Ala Arg Pro Pro Pro Pro Ile  
       65                                  70                                  75                                  80

Met Thr Asp Gly Glu Asp Ala Asp Tyr Thr His Phe Thr Asn Gln Gln  
                                   85                                  90                                  95

Ser Ser Thr Arg His Phe Ser Lys Ser Glu Ser Ser His Lys Gly Phe  
           100                                  105                                  110

His Tyr Lys His  
       115

<210> 1107  
 <211> 4  
 <212> PRT  
 <213> Homo sapiens

<400> 1107  
Val Leu Arg Asn  
1

<210> 1108  
<211> 4  
<212> PRT  
<213> Homo sapiens

<400> 1108  
Val Leu Arg Asn  
1

<210> 1109  
<211> 54  
<212> PRT  
<213> Homo sapiens

<400> 1109  
Met Ser Ser Leu Gly Leu Gln Glu Pro Gln Lys Asn Leu Thr Ser Phe  
1 5 10 15  
Pro Gln Ile Ser Pro Tyr Pro Leu Ser Ile Phe Thr Pro Ile Ile Ile  
20 25 30  
Tyr Phe His Thr Ile Gln Leu Ser Lys Asp Ser Trp Arg Leu Thr Cys  
35 40 45  
Ile Phe Arg Leu Thr Glu  
50

<210> 1110  
<211> 5  
<212> PRT  
<213> Homo sapiens

<400> 1110  
Thr Thr Met Thr Gly  
1 5

<210> 1111  
<211> 40  
<212> PRT  
<213> Homo sapiens

<400> 1111  
Met Pro Thr Thr Val Gly Ala Gln Ile Phe Ile Phe Ile Phe Leu Leu  
1 5 10 15  
Cys Thr Leu Phe Phe Leu Pro Phe Tyr Gly Cys Leu Lys Ser Arg Glu  
20 25 30



Lys Gly Arg Leu Val Asn Asp Glu  
                   35                  40

<210> 1112  
 <211> 40  
 <212> PRT  
 <213> Homo sapiens

<400> 1112  
 Met Pro Thr Thr Val Gly Ala Gln Ile Phe Ile Phe Ile Phe Leu Leu  
       1                  5                  10                  15  
 Cys Thr Leu Phe Phe Leu Pro Phe Tyr Gly Cys Leu Lys Ser Arg Glu  
                   20                  25                  30

Lys Gly Arg Leu Val Asn Asp Glu  
                   35                  40

<210> 1113  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

<400> 1113  
 Val Asp Pro Arg Val Arg Thr Ser Ser Arg Ser Arg Ala Ala Ala Leu  
       1                  5                  10                  15  
 Phe Glu Cys Phe Leu Met Val Phe Leu Leu Lys Cys Gln Val Asn Asn  
                   20                  25                  30  
 Phe Asn Pro Ile Gln Gln Tyr Ser Leu Phe Pro Leu Lys Ser Ser Gly  
                   35                  40                  45  
 Thr Cys Ser Ile Ser Leu Phe Cys Met Arg Gly Leu Tyr Phe Cys Leu  
           50                  55                  60  
 Gly Val Val Ile Cys Thr His Ala Ile Leu Leu Lys Pro Ser Cys Leu  
       65                  70                  75                  80  
 Val Leu Phe Leu Glu Ser Phe Phe Phe Pro Val Leu Met Tyr Ala Gly  
                   85                  90                  95  
 Phe Gly Asn Ser Ser  
                   100

<210> 1114  
 <211> 216  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (86)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1114

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Met Lys Glu Arg Lys Gly Phe Asn Leu Gln Gly Pro Leu Ile Leu Trp
 1           5           10           15

Ser Phe Cys Leu Ala Ile Phe Ser Ile Leu Gly Ala Val Arg Met Trp
           20           25           30

Gly Ile Met Gly Thr Val Leu Leu Thr Gly Gly Leu Lys Gln Thr Val
           35           40           45

Cys Phe Ile Asn Phe Ile Asp Asn Ser Thr Val Lys Phe Trp Ser Trp
           50           55           60

Val Phe Leu Leu Ser Lys Val Ile Glu Leu Gly Asp Thr Ala Phe Ile
           65           70           75           80

Ile Leu Arg Lys Arg Xaa Leu Ile Phe Ile His Trp Tyr His His Ser
           85           90           95

Thr Val Leu Val Tyr Thr Ser Phe Gly Tyr Lys Asn Lys Val Pro Ala
           100          105          110

Gly Gly Trp Phe Val Thr Met Asn Phe Gly Val His Ala Ile Met Tyr
           115          120          125

Thr Tyr Tyr Thr Leu Lys Ala Ala Asn Val Lys Pro Pro Lys Met Leu
           130          135          140

Pro Met Leu Ile Thr Ser Leu Gln Ile Leu Gln Met Phe Val Gly Ala
           145          150          155          160

Ile Val Ser Ile Leu Thr Tyr Ile Trp Arg Gln Asp Gln Gly Cys His
           165          170          175

Thr Thr Met Glu His Leu Phe Trp Ser Phe Ile Leu Tyr Met Thr Tyr
           180          185          190

Phe Ile Leu Phe Ala His Phe Phe Cys Gln Thr Tyr Ile Arg Pro Lys
           195          200          205

Val Lys Ala Lys Thr Lys Ser Gln
           210          215

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<210> 1115

<211> 216

<212> PRT

<213> Homo sapiens

<400> 1115

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Met Lys Glu Arg Lys Gly Phe Asn Leu Gln Gly Pro Leu Ile Leu Trp
 1           5           10           15

Ser Phe Cys Leu Ala Ile Phe Ser Ile Leu Gly Ala Val Arg Met Trp
           20           25           30

Gly Ile Met Gly Thr Val Leu Leu Thr Gly Gly Leu Lys Gln Thr Val

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35	40	45
Cys Phe Ile Asn Phe Ile Asp Asn Ser Thr Val Lys Phe Trp Ser Trp		
50	55	60
Val Phe Leu Leu Ser Lys Val Ile Glu Leu Gly Asp Thr Ala Phe Ile		
65	70	75
Ile Leu Arg Lys Arg Pro Leu Ile Phe Ile His Trp Tyr His His Ser		
	85	90
Thr Val Leu Val Tyr Thr Ser Phe Gly Tyr Lys Asn Lys Val Pro Ala		
	100	105
Gly Gly Trp Phe Val Thr Met Asn Phe Gly Val His Ala Ile Met Tyr		
	115	120
Thr Tyr Tyr Thr Leu Lys Ala Ala Asn Val Lys Pro Pro Lys Met Leu		
	130	135
Pro Met Leu Ile Thr Ser Leu Gln Ile Leu Gln Met Phe Val Gly Ala		
	145	150
Ile Val Ser Ile Leu Thr Tyr Ile Trp Arg Gln Asp Gln Gly Cys His		
	165	170
Thr Thr Met Glu His Leu Phe Trp Ser Phe Ile Leu Tyr Met Thr Tyr		
	180	185
Phe Ile Leu Phe Ala His Phe Phe Cys Gln Thr Tyr Ile Arg Pro Lys		
	195	200
Val Lys Ala Lys Thr Lys Ser Gln		
	210	215

&lt;210&gt; 1116

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1116

Val Leu Gly Leu Gly Val Val Leu Thr Pro Ile Ile Pro Val Leu Trp
1 5 10 15

&lt;210&gt; 1117

&lt;211&gt; 55

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (30)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1117

Asn Asn Leu Cys Phe Ile Ser Pro Phe Thr Ser Met Tyr Trp Leu Ala  
1 5 10 15

Gln Phe Ile Val Ser Glu Lys Gln Gly Thr His Leu His Xaa Leu Gln  
20 25 30

Glu Thr Val Leu Pro Phe Asn Leu Lys Thr Arg Lys Leu Asn Phe Asn  
35 40 45

Arg Asn Leu Leu Ser Met Leu  
50 55

&lt;210&gt; 1118

&lt;211&gt; 32

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1118

Met His Met Trp Ile Leu Ser Leu His Phe Ile Phe Thr Pro Arg Leu  
1 5 10 15

Val Leu Cys Glu Val Arg Pro Asn Lys Ile Val Glu Asp Thr Ile Ile  
20 25 30

&lt;210&gt; 1119

&lt;211&gt; 1

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1119

Ala

1

&lt;210&gt; 1120

&lt;211&gt; 51

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (20)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (38)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1120

Met Glu Leu Leu Gln Ala Lys Lys Leu Leu Leu Leu Gly Leu Phe  
 1 5 10 15  
 Val Ser Cys Xaa Ser Asn Ile Arg Lys Thr Glu Pro Cys Phe Gly Leu  
 20 25 30  
 Asp Ser Ile Thr Phe Xaa Asp Pro Lys Lys Lys Cys Leu Ser Asn Leu  
 35 40 45  
 Lys Ser Cys  
 50

<210> 1121  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 1121  
 Met Glu Leu Leu Gln Ala Lys Lys Leu Leu Leu Leu Gly Leu Phe  
 1 5 10 15  
 Val Ser Cys Cys Ser Asn Ile Arg Lys Thr Glu Pro Cys Phe Gly Leu  
 20 25 30  
 Asp Ser Ile Thr Phe Arg Asp Pro Lys Lys Lys Cys Leu Cys Asn Leu  
 35 40 45  
 Lys Ser Cys  
 50

<210> 1122  
 <211> 2  
 <212> PRT  
 <213> Homo sapiens

<400> 1122  
 Tyr Phe  
 1

<210> 1123  
 <211> 88  
 <212> PRT  
 <213> Homo sapiens

<400> 1123  
 Leu Thr Thr Pro Tyr Gly Gly Leu Cys Lys Gln Ser Thr Arg Gly Ser  
 1 5 10 15  
 Ile Ile Ser Thr Trp Gln Cys Thr Trp Trp Leu Cys Asp Leu Glu Lys  
 20 25 30  
 Val Ser Tyr Ser Cys Leu Cys Val Leu Thr Leu Glu Thr Glu Thr Leu  
 35 40 45

Phe Val Val Phe Thr Leu Phe Gln Gln Gln Lys Leu Phe Gln Gly Lys  
 50 55 60  
 Ser Tyr Arg Thr Phe Lys His Val Cys Ile His Thr Tyr Pro Ile Pro  
 65 70 75 80  
 His Tyr Ile Lys Val Ile Leu Leu  
 85

<210> 1124  
 <211> 82  
 <212> PRT  
 <213> Homo sapiens

<400> 1124  
 Met Asn Leu Gly Trp Tyr Gln Met His Pro Leu Lys Met Ile Trp Leu  
 1 5 10 15  
 Thr Ile Phe Leu Thr Trp Leu Met Arg Gln Ala Ser Pro Thr Gly His  
 20 25 30  
 Asp Leu Glu Val Lys Val Phe Cys Cys Tyr Cys Gly Leu Lys Tyr Leu  
 35 40 45  
 Val Met Gly Glu Glu Cys Arg Val Val Ala Leu Ala Gln Thr Gln Glu  
 50 55 60  
 Asn Pro Phe Ser Pro Leu Phe Tyr Phe Cys Tyr Ser Asp His Leu Ser  
 65 70 75 80  
 Pro Phe

<210> 1125  
 <211> 82  
 <212> PRT  
 <213> Homo sapiens

<400> 1125  
 Met Asn Leu Gly Trp Tyr Gln Met His Pro Leu Lys Met Ile Trp Leu  
 1 5 10 15  
 Thr Ile Phe Leu Thr Trp Leu Met Arg Gln Ala Ser Pro Thr Gly His  
 20 25 30  
 Asp Leu Glu Val Lys Val Phe Cys Cys Tyr Cys Gly Leu Lys Tyr Leu  
 35 40 45  
 Val Met Gly Glu Glu Cys Arg Val Val Ala Leu Ala Gln Thr Gln Glu  
 50 55 60  
 Asn Pro Phe Ser Pro Leu Phe Tyr Phe Cys Tyr Ser Asp His Leu Ser  
 65 70 75 80  
 Pro Phe

<210> 1126  
 <211> 84  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (17)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1126  
 Met Gly Thr Phe Ser Leu Met Leu Leu Leu Leu Pro Ser Val Val Cys  
           1                  5                  10                  15  
 Xaa Ser Phe Lys Val Arg Pro Leu Phe Cys Arg Ala Ala Val Val Cys  
                   20                  25                  30  
 Ser Gly Ser Thr Ser Asp Pro Ile His Leu Gly Pro Ser His Thr Trp  
           35                  40                  45  
 Arg Cys His Gln Trp Arg Leu Gln Asn Ser Lys Asp Gly Cys Leu Leu  
           50                  55                  60  
 Leu Pro Pro Gly Ser Pro Ser Gln Arg Glu Thr Asp Leu Met Leu Ala  
           65                  70                  75                  80  
 Gly Met Leu Leu

<210> 1127  
 <211> 25  
 <212> PRT  
 <213> Homo sapiens

<400> 1127  
 Gly Leu Phe Ala Leu Ser Phe Leu Phe Leu Leu Val Val Met Leu Gly  
           1                  5                  10                  15  
 Cys Gln Phe Asp Ile Phe Leu Ala Phe  
                   20                  25

<210> 1128  
 <211> 84  
 <212> PRT  
 <213> Homo sapiens

<400> 1128  
 Met Gly Thr Phe Ser Leu Met Leu Leu Leu Leu Pro Ser Val Val Cys  
           1                  5                  10                  15  
 Phe Ser Phe Lys Val Arg Pro Leu Phe Cys Arg Ala Ala Val Val Cys  
                   20                  25                  30

Ser Gly Ser Thr Ser Asp Pro Ile His Leu Gly Pro Ser His Thr Trp  
                   35                                  40                                  45  
 Arg Cys His Gln Trp Arg Leu Gln Asn Ser Lys Asp Gly Cys Leu Leu  
                   50                                  55                                  60  
 Leu Pro Pro Gly Ser Pro Ser Gln Arg Glu Thr Asp Leu Met Leu Ala  
                   65                                  70                                  75                                  80  
 Gly Met Leu Leu

<210> 1129  
 <211> 219  
 <212> PRT  
 <213> Homo sapiens

<400> 1129  
 Met Glu Met Ala Ser Lys Met Lys Asp Thr Gly Phe Ile Val Phe Ala  
   1                                  5                                  10                                  15  
 Val Leu Leu Leu Val Ser Cys Leu Ile Leu Ile Phe Val Ile Ala Pro  
                   20                                  25                                  30  
 Arg Tyr Gly Gln Arg Asn Ile Leu Ile Tyr Ile Ile Ile Cys Ser Val  
                   35                                  40                                  45  
 Ile Gly Ala Phe Ser Val Ala Ala Val Lys Gly Leu Gly Ile Thr Ile  
                   50                                  55                                  60  
 Lys Asn Phe Phe Gln Gly Leu Pro Val Val Arg His Pro Leu Pro Tyr  
                   65                                  70                                  75                                  80  
 Ile Leu Ser Leu Ile Leu Ala Leu Ser Leu Ser Thr Gln Val Asn Phe  
                                   85                                  90                                  95  
 Leu Asn Arg Ala Leu Asp Ile Phe Asn Thr Ser Leu Val Phe Pro Ile  
                   100                                  105                                  110  
 Tyr Tyr Val Phe Phe Thr Thr Val Val Val Thr Ser Ser Ile Ile Leu  
                   115                                  120                                  125  
 Phe Lys Glu Trp Tyr Ser Met Ser Ala Val Asp Ile Ala Gly Thr Leu  
                   130                                  135                                  140  
 Ser Gly Phe Val Thr Ile Ile Leu Gly Val Phe Met Leu His Ala Phe  
                   145                                  150                                  155                                  160  
 Lys Asp Leu Asp Ile Ser Cys Ala Ser Leu Pro His Met His Lys Asn  
                                   165                                  170                                  175  
 Pro Pro Pro Ser Pro Ala Pro Glu Pro Thr Val Ile Arg Leu Glu Asp  
                   180                                  185                                  190  
 Lys Asn Val Leu Val Asp Asn Ile Glu Leu Ala Ser Thr Ser Ser Pro  
                   195                                  200                                  205  
 Glu Glu Lys Pro Lys Val Phe Ile Ile His Ser



210

215

<210> 1130  
 <211> 219  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (104)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (197)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1130  
 Met Glu Met Ala Ser Lys Met Lys Asp Thr Gly Phe Ile Val Phe Ala  
     1                    5                    10                    15  
 Val Leu Leu Leu Val Ser Cys Leu Ile Leu Ile Phe Val Ile Ala Pro  
                     20                    25                    30  
 Arg Tyr Gly Gln Arg Asn Ile Leu Ile Tyr Ile Ile Ile Cys Ser Val  
             35                    40                    45  
 Ile Gly Ala Phe Ser Val Ala Ala Val Lys Gly Leu Gly Ile Thr Ile  
             50                    55                    60  
 Lys Asn Phe Phe Gln Gly Leu Pro Val Val Arg His Pro Leu Pro Tyr  
     65                    70                    75                    80  
 Ile Leu Ser Leu Ile Leu Ala Leu Ser Leu Ser Thr Gln Val Asn Phe  
                     85                    90                    95  
 Leu Asn Arg Ala Leu Asp Ile Xaa Asn Thr Ser Leu Val Phe Pro Ile  
             100                    105                    110  
 Tyr Tyr Val Phe Phe Thr Thr Val Val Val Thr Ser Ser Ile Ile Leu  
     115                    120                    125  
 Phe Lys Glu Trp Tyr Ser Met Ser Ala Val Asp Ile Ala Gly Thr Leu  
     130                    135                    140  
 Ser Gly Phe Val Thr Ile Ile Leu Gly Val Phe Met Leu His Ala Phe  
     145                    150                    155                    160  
 Lys Asp Leu Asp Ile Ser Cys Ala Ser Leu Pro His Met His Lys Asn  
     165                    170                    175  
 Pro Pro Pro Ser Pro Ala Pro Glu Pro Thr Val Ile Arg Leu Glu Asp  
     180                    185                    190  
 Lys Asn Val Leu Xaa Asp Asn Ile Glu Leu Ala Ser Thr Ser Ser Pro  
     195                    200                    205  
 Glu Glu Lys Pro Lys Val Phe Ile Ile His Ser

603

210

215

<210> 1131  
 <211> 217  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1131

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Met Ala Ser Lys Met Lys Asp Thr Gly Phe Ile Val Phe Ala Val Leu
  1              5              10              15

Leu Leu Val Ser Cys Leu Ile Leu Ile Phe Val Ile Ala Pro Arg Tyr
              20              25              30

Gly Gln Arg Asn Ile Leu Ile Tyr Ile Ile Ile Cys Ser Val Ile Gly
              35              40              45

Ala Phe Ser Val Ala Ala Val Lys Gly Leu Gly Ile Thr Ile Lys Asn
  50              55              60

Phe Phe Gln Gly Leu Pro Val Val Arg His Pro Leu Pro Tyr Ile Leu
  65              70              75              80

Ser Leu Ile Leu Ala Leu Ser Leu Ser Thr Gln Val Asn Phe Leu Asn
              85              90              95

Arg Ala Leu Asp Ile Phe Asn Thr Ser Leu Val Phe Pro Ile Tyr Tyr
              100              105              110

Val Phe Phe Thr Thr Val Val Val Thr Ser Ser Ile Ile Leu Phe Lys
              115              120              125

Glu Trp Tyr Ser Met Ser Ala Val Asp Ile Ala Gly Thr Leu Ser Gly
              130              135              140

Phe Val Thr Ile Ile Leu Gly Val Phe Met Leu His Ala Phe Lys Asp
              145              150              155              160

Leu Asp Ile Ser Cys Ala Ser Leu Pro His Met His Lys Asn Pro Pro
              165              170              175

Pro Ser Pro Ala Pro Glu Pro Thr Val Ile Arg Leu Glu Asp Lys Asn
              180              185              190

Val Leu Val Asp Asn Ile Glu Leu Ala Ser Thr Ser Ser Pro Glu Glu
              195              200              205

Lys Pro Lys Val Phe Ile Ile His Ser
              210              215

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<210> 1132  
 <211> 253  
 <212> PRT  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (215)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (252)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (253)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1132

Met	Gln	Ala	Cys	Val	Leu	Leu	Leu	Gly	Leu	Val	Leu	Ser	Ala	Gln	Leu
1				5					10					15	

Gln	Ser	Pro	Glu	Asn	Met	Arg	Met	Gly	Gly	Gly	Arg	Val	Leu	Leu	Arg
			20					25					30		

Ala	His	Pro	Val	Pro	Ala	Gly	Gly	Gly	Gln	Cys	Gln	Ser	Ser	Ala	Lys
			35			40						45			

Gly	Pro	Trp	Val	Gly	Thr	Gly	Pro	Glu	Arg	Glu	Glu	Arg	Asp	Ser	Pro
	50					55					60				

Glu	Gly	Arg	Trp	Ala	Ser	Tyr	Trp	Ala	Gln	Ser	Trp	Glu	Gly	Val	Ala
65					70					75					80

Ala	Ser	Thr	Gly	Trp	Ala	Trp	Thr	Pro	Leu	Ala	Pro	Thr	Pro	Ser	Gly
				85					90					95	

Cys	Gly	Cys	Ser	Leu	Ser	Leu	Glu	Ser	Arg	Thr	Gly	Pro	Gly	Cys	Leu
			100					105					110		

Gly	Gly	Cys	Gln	Val	Pro	Pro	Glu	Leu	Pro	Arg	Ala	Pro	Thr	Cys	Lys
		115					120					125			

Cys	Gln	Pro	Gln	Gly	Ser	Ala	Gln	Met	Arg	Pro	Ser	Gln	Leu	Gln	Pro
	130					135					140				

Ala	Met	Pro	Trp	Asp	Ala	His	Arg	Glu	Gly	Gly	Gly	Phe	Gly	Leu	Leu
145					150					155					160

Ser	Pro	Trp	Glu	Arg	Leu	Gly	Ala	Val	Thr	Ala	Arg	Leu	Ala	Gln	Ala
			165						170					175	

His	Cys	Arg	Val	Gly	Trp	Leu	Pro	Gln	Pro	Gly	Leu	Gly	Gly	Thr	Pro
			180					185					190		

Gly	Ser	Gly	Pro	Pro	Cys	Leu	Glu	Ser	Gln	Trp	Gly	Asp	Gly	Glu	Glu
	195						200					205			

Thr	Trp	Pro	Pro	Met	Ala	Xaa	Gly	Gln	Leu	Arg	Thr	Arg	Thr	Cys	Trp
	210					215					220				

Ser	Trp	Lys	Cys	Cys	Gly	Val	Glu	Gly	Trp	Gly	Gly	Gln	Leu	Leu	Thr
225					230					235					240

Pro Ala Ser Cys Leu Leu Leu Ser Thr Phe Pro Xaa Xaa  
 245 250

<210> 1133  
 <211> 102  
 <212> PRT  
 <213> Homo sapiens

<400> 1133

Asn Ser Glu Lys Gly Gln Lys Lys Gln Arg Gly Pro Arg Trp Ile Cys  
 1 5 10 15  
 Gln Leu Phe Cys Arg Cys Phe Leu Pro Leu Leu Trp Val Val Cys Ser  
 20 25 30  
 Pro Leu Gln Thr Ser Ala Arg Arg Glu Gly Leu Asn Leu Pro Ala Pro  
 35 40 45  
 Gln Asp Leu Leu Pro Ser Gly Pro Ser Pro Ala Leu Arg Ser Leu Pro  
 50 55 60  
 Asp Arg Arg Val Asp Arg Ala Thr Trp Ala Ala Arg Glu Thr His Gly  
 65 70 75 80  
 Gly Pro Pro Cys Gly Gln Pro Cys Gln Leu Pro Pro Ser Pro Glu Leu  
 85 90 95  
 His Leu His Leu Glu Glu  
 100

<210> 1134  
 <211> 137  
 <212> PRT  
 <213> Homo sapiens

<400> 1134

Met Gln Ala Cys Val Leu Leu Leu Gly Leu Val Leu Ser Ala Gln Leu  
 1 5 10 15  
 Gln Ser Pro Glu Asn Met Arg Met Gly Gly Gly Arg Val Leu Leu Arg  
 20 25 30  
 Ala His Pro Val Pro Ala Gly Gly Gly Gln Cys Gln Ser Ser Ala Lys  
 35 40 45  
 Gly Pro Trp Val Gly Thr Gly Pro Glu Arg Glu Glu Arg Asp Ser Pro  
 50 55 60  
 Glu Gly Arg Trp Ala Ser Tyr Trp Ala Gln Ser Trp Glu Gly Val Ala  
 65 70 75 80  
 Ala Ser Thr Gly Trp Ala Trp Thr Pro Leu Ala Pro Thr Pro Ser Gly  
 85 90 95  
 Cys Gly Cys Ser Pro Lys Pro Gly Glu Gln Asp Arg Pro Gly Val Ser  
 100 105 110

Gly Arg Leu Pro Gly Ala Ser Gln Ser Ser Gln Gly Pro Pro Pro Ala  
 115 120 125

Ser Ala Ser Leu Arg Ala Val Pro Lys  
 130 135

<210> 1135

<211> 93

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (34)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (76)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1135

Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe  
 1 5 10 15

Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr  
 20 25 30

Leu Xaa Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys  
 35 40 45

Val Leu Thr Leu Leu Gly Leu Ser Ser Leu Val Gly Val Thr Trp Gly  
 50 55 60

Leu Ala Ile Phe Thr Pro Leu Gly Leu Ser Thr Xaa Tyr Ile Phe Ala  
 65 70 75 80

Leu Phe Asn Ser Leu Gln Ala Gln Arg Gly Ile Thr Val  
 85 90

<210> 1136

<211> 93

<212> PRT

<213> Homo sapiens

<400> 1136

Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe  
 1 5 10 15

Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr  
 20 25 30

Leu Ser Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys  
 35 40 45

Val Leu Thr Leu Leu Gly Leu Ser Ser Leu Val Gly Val Thr Trp Gly  
 50 55 60

Leu Ala Ile Phe Thr Pro Leu Gly Leu Ser Thr Val Tyr Ile Phe Ala  
 65 70 75 80

Leu Phe Asn Ser Leu Gln Ala Gln Arg Gly Ile Thr Val  
 85 90

<210> 1137

<211> 122

<212> PRT

<213> Homo sapiens

<400> 1137

Met Tyr Ala Leu Tyr Ile Thr Val His Gly Tyr Phe Leu Ile Thr Phe  
 1 5 10 15

Leu Phe Gly Met Val Val Leu Ala Leu Val Val Trp Lys Ile Phe Thr  
 20 25 30

Leu Ser Arg Ala Thr Ala Val Lys Glu Arg Gly Lys Asn Arg Lys Lys  
 35 40 45

Val Leu Thr Leu Leu Gly Leu Ser Ser Leu Val Gly Val Thr Trp Gly  
 50 55 60

Leu Ala Ile Phe Thr Pro Leu Gly Leu Ser Thr Val Tyr Ile Phe Ala  
 65 70 75 80

Leu Phe Asn Ser Leu Gln Gly Val Phe Ile Cys Cys Trp Phe Thr Ile  
 85 90 95

Leu Tyr Leu Pro Ser Gln Ser Thr Thr Val Ser Ser Ser Thr Ala Arg  
 100 105 110

Leu Asp Gln Ala His Ser Ala Ser Gln Glu  
 115 120

<210> 1138

<211> 241

<212> PRT

<213> Homo sapiens

<400> 1138

Ala Pro Gly Gln Thr Pro Ser Leu Cys Ser Trp Leu Leu Pro Leu Pro  
 1 5 10 15

Ser Thr Trp Ala Thr Thr Gly His Val Cys Phe Ser Asp Ile Leu Gln  
 20 25 30

Thr Pro Asp Gly Gly Gln Leu Leu Leu Asp Trp Ala Lys Gln Pro Asp  
 35 40 45

Ser Ser Gln Asp Pro Asp Pro Thr Thr Gln Pro Ile Val Leu Leu Leu  
 50 55 60

Pro Gly Ile Thr Gly Ser Ser Gln Glu Thr Tyr Val Leu His Leu Val  
 65 70 75 80  
 Asn Gln Ala Leu Arg Asp Gly Tyr Gln Ala Val Val Phe Asn Asn Arg  
 85 90 95  
 Gly Cys Arg Gly Glu Glu Leu Arg Thr His Arg Ala Phe Cys Ala Ser  
 100 105 110  
 Asn Thr Glu Asp Leu Glu Thr Val Val Asn His Ile Lys His Arg Tyr  
 115 120 125  
 Pro Gln Ala Pro Leu Leu Ala Val Gly Ile Ser Phe Gly Gly Ile Leu  
 130 135 140  
 Val Leu Asn His Leu Ala Gln Ala Arg Gln Ala Ala Gly Leu Val Ala  
 145 150 155 160  
 Ala Leu Thr Leu Ser Ala Cys Trp Asp Ser Phe Glu Thr Thr Arg Ser  
 165 170 175  
 Leu Glu Thr Pro Leu Asn Ser Leu Leu Phe Asn Gln Pro Leu Thr Ala  
 180 185 190  
 Gly Leu Cys Gln Leu Val Glu Arg Leu Ser Tyr Gly Lys Thr Cys Arg  
 195 200 205  
 Pro Val Gln Ser Ala Ser Leu Met Ser Ala Thr His Leu Trp Pro Leu  
 210 215 220  
 Asp Ile Lys Thr Val Leu Pro Thr Thr Lys Gln Gln Ala Leu Glu Pro  
 225 230 235 240  
 Arg

<210> 1139  
 <211> 242  
 <212> PRT  
 <213> Homo sapiens

<400> 1139  
 Met Ala Pro Gly Gln Thr Pro Ser Leu Cys Ser Trp Leu Leu Pro Leu  
 1 5 10 15  
 Pro Ser Thr Trp Ala Thr Thr Gly His Val Cys Phe Ser Asp Ile Leu  
 20 25 30  
 Gln Thr Pro Asp Gly Gly Gln Leu Leu Leu Asp Trp Ala Lys Gln Pro  
 35 40 45  
 Asp Ser Ser Gln Asp Pro Asp Pro Thr Thr Gln Pro Ile Val Leu Leu  
 50 55 60  
 Leu Pro Gly Ile Thr Gly Ser Ser Gln Glu Thr Tyr Val Leu His Leu  
 65 70 75 80

Val Asn Gln Ala Leu Arg Asp Gly Tyr Gln Ala Val Val Phe Asn Asn  
                             85                            90                            95  
 Arg Gly Cys Arg Gly Glu Glu Leu Arg Thr His Arg Ala Phe Cys Ala  
                             100                            105                            110  
 Ser Asn Thr Glu Asp Leu Glu Thr Val Val Asn His Ile Lys His Arg  
                             115                            120                            125  
 Tyr Pro Gln Ala Pro Leu Leu Ala Val Gly Ile Ser Phe Gly Gly Ile  
                             130                            135                            140  
 Leu Val Leu Asn His Leu Ala Gln Ala Arg Gln Ala Ala Gly Leu Val  
                             145                            150                            155                            160  
 Ala Ala Leu Thr Leu Ser Ala Cys Trp Asp Ser Phe Glu Thr Thr Arg  
                             165                            170                            175  
 Ser Leu Glu Thr Pro Leu Asn Ser Leu Leu Phe Asn Gln Pro Leu Thr  
                             180                            185                            190  
 Ala Gly Leu Cys Gln Leu Val Glu Arg Leu Ser Tyr Gly Lys Thr Cys  
                             195                            200                            205  
 Arg Pro Val Gln Ser Ala Ser Leu Met Ser Ala Thr His Leu Trp Pro  
                             210                            215                            220  
 Leu Asp Ile Lys Thr Val Leu Pro Thr Thr Lys Gln Gln Ala Leu Glu  
                             225                            230                            235                            240  
 Pro Arg

&lt;210&gt; 1140

&lt;211&gt; 180

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (143)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1140

Met Gly Trp Pro Arg Pro Gly Arg Ala Leu Val Ala Val Lys Ala Leu  
           1                            5                            10                            15  
 Leu Val Leu Ser Leu Leu Gln Val Pro Ala Gln Ala Val Val Arg Ala  
                             20                            25                            30  
 Val Leu Glu Asp Asn Ser Ser Ser Val Asp Phe Ala Asp Leu Pro Ala  
                             35                            40                            45  
 Leu Phe Gly Val Pro Leu Ala Pro Glu Gly Ile Arg Gly Tyr Leu Met  
           50                            55                            60  
 Glu Val Lys Pro Ala Asn Ala Cys His Pro Ile Glu Ala Pro Arg Leu  
           65                            70                            75                            80



Gly Asn Arg Ser Leu Gly Ala Ile Val Leu Ile Arg Arg Tyr Asp Cys  
                                     85                                    90                                    95  
 Thr Phe Asp Leu Lys Val Leu Asn Ala Gln Arg Ala Gly Phe Glu Ala  
                                     100                                    105                                    110  
 Ala Ile Val His Asn Val His Ser Asp Asp Leu Val Ser Met Thr His  
                                     115                                    120                                    125  
 Val Tyr Glu Asp Leu Arg Gly Gln Ile Ala Ile Pro Ser Val Xaa Val  
                                     130                                    135                                    140  
 Ser Glu Ala Ala Arg Arg Thr Cys Gly Ser Ser Trp Ala Ala Thr Ser  
                                     145                                    150                                    155                                    160  
 Arg Pro Thr Arg Cys Pro Ala Asp Asp Pro Pro Cys His Asp Leu Ala  
                                     165                                    170                                    175  
 Val Thr Pro Cys  
                                     180

<210> 1141  
 <211> 225  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (21)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (45)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1141  
 Thr Gln Pro Cys Gln Arg Pro Gly Ile Val Thr Pro Val Leu Thr Val  
   1                                    5                                    10                                    15  
 Ser Trp Val Leu Xaa Cys Thr Leu Ala Leu Val Val Ser Ala Phe Phe  
                                     20                                    25                                    30  
 Val Leu Asn His Leu Trp Leu Trp Ala Gln Ala Cys Xaa Ser His Arg  
                                     35                                    40                                    45  
 Arg Pro Val Lys Thr Ser Thr Cys Gln Lys Ala Gln Val Arg Thr Phe  
                                     50                                    55                                    60  
 Thr Trp His Asn Asp Leu Cys Ala Ile Cys Leu Asp Glu Tyr Glu Glu  
   65                                    70                                    75                                    80  
 Gly Asp Gln Leu Lys Ile Leu Pro Cys Ser His Thr Tyr His Cys Lys  
                                     85                                    90                                    95  
 Cys Ile Asp Pro Trp Phe Ser Gln Ala Pro Arg Arg Ser Cys Pro Val  
                                     100                                    105                                    110

Cys Lys Gln Ser Val Ala Ala Thr Glu Asp Ser Phe Asp Ser Thr Thr  
 115 120 125  
 Tyr Ser Phe Arg Asp Glu Asp Pro Ser Leu Pro Gly His Arg Pro Pro  
 130 135 140  
 Ile Trp Ala Ile Gln Val Gln Tyr Ala Pro Gly Gly Trp Ser Cys Trp  
 145 150 155 160  
 Ala Ala Pro Val Pro Thr Ala Thr Ala Ala Pro Arg Pro Trp Arg Gln  
 165 170 175  
 Ser Ile Pro Leu Ser Pro Gln Pro Leu Leu Arg Pro Leu Val Ser Lys  
 180 185 190  
 Asp Leu Gly Gln Gly Gly Gly Cys Asn Glu Glu Cys Phe Trp Ser Glu  
 195 200 205  
 Lys Asn Lys Val Gly Leu Lys Ala Glu Lys Lys Lys Lys Lys Lys Thr  
 210 215 220  
 Arg  
 225

<210> 1142  
 <211> 359  
 <212> PRT  
 <213> Homo sapiens

<400> 1142

Met Gly Trp Pro Arg Pro Gly Arg Ala Leu Val Ala Val Lys Ala Leu  
 1 5 10 15  
 Leu Val Leu Ser Leu Leu Gln Val Pro Ala Gln Ala Val Val Arg Ala  
 20 25 30  
 Val Leu Glu Asp Asn Ser Ser Ser Val Asp Phe Ala Asp Leu Pro Ala  
 35 40 45  
 Leu Phe Gly Val Pro Leu Ala Pro Glu Gly Ile Arg Gly Tyr Leu Met  
 50 55 60  
 Glu Val Lys Pro Ala Asn Ala Cys His Pro Ile Glu Ala Pro Arg Leu  
 65 70 75 80  
 Gly Asn Arg Ser Leu Gly Ala Ile Val Leu Ile Arg Arg Tyr Asp Cys  
 85 90 95  
 Thr Phe Asp Leu Lys Val Leu Asn Ala Gln Arg Ala Gly Phe Glu Ala  
 100 105 110  
 Ala Ile Val His Asn Val His Ser Asp Asp Leu Val Ser Met Thr His  
 115 120 125  
 Val Tyr Glu Asp Leu Arg Gly Gln Ile Ala Ile Pro Ser Val Phe Val  
 130 135 140

Ser Glu Ala Ala Ser Gln Asp Leu Arg Val Ile Leu Gly Cys Asn Lys  
 145 150 155 160  
 Ser Ala His Ala Leu Leu Leu Pro Asp Asp Pro Pro Cys His Asp Leu  
 165 170 175  
 Gly Cys His Pro Val Leu Thr Val Ser Trp Val Leu Gly Cys Thr Leu  
 180 185 190  
 Ala Leu Val Val Ser Ala Phe Phe Val Leu Asn His Leu Trp Leu Trp  
 195 200 205  
 Ala Gln Ala Cys Cys Ser His Arg Arg Pro Val Lys Thr Ser Thr Cys  
 210 215 220  
 Gln Lys Ala Gln Val Arg Thr Phe Thr Trp His Asn Asp Leu Cys Ala  
 225 230 235 240  
 Ile Cys Leu Asp Glu Tyr Glu Glu Gly Asp Gln Leu Lys Ile Leu Pro  
 245 250 255  
 Cys Ser His Thr Tyr His Cys Lys Cys Ile Asp Pro Trp Phe Ser Gln  
 260 265 270  
 Ala Pro Arg Arg Ser Cys Pro Val Cys Lys Gln Ser Val Ala Ala Thr  
 275 280 285  
 Glu Asp Ser Phe Asp Ser Thr Thr Tyr Ser Phe Arg Asp Glu Asp Pro  
 290 295 300  
 Ser Leu Pro Gly His Arg Pro Pro Ile Trp Ala Ile Gln Val Gln Leu  
 305 310 315 320  
 Arg Ser Arg Arg Leu Glu Leu Leu Gly Arg Ala Ser Pro His Cys His  
 325 330 335  
 Cys Ser Thr Thr Ser Leu Glu Ala Glu Tyr Thr Thr Val Ser Ser Ala  
 340 345 350  
 Pro Pro Glu Ala Pro Gly Gln  
 355

&lt;210&gt; 1143

&lt;211&gt; 133

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1143

Met Trp His Thr Lys Pro Leu Gly Ser Gly Ser Cys Val Pro Leu Leu  
 1 5 10 15  
 Pro Leu Leu Leu Leu Leu Leu Leu Phe Pro Leu Leu Pro Trp Pro  
 20 25 30  
 Pro Pro Leu Pro Pro Pro Pro Pro Ser Ser Leu His Pro Phe Ala Pro  
 35 40 45  
 Ala Phe Pro Ala Thr Gly Ser Leu Ser Ser Asn Asn Ser Gln Leu Leu

[illegible]

```
<210> 1144
<211> 86
<212> PRT
<213> Homo sapiens
```

```
<220>  
<221> SITE  
<222> (72)  
<223> Xaa equals any of the naturally occurring L-amino acids
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<400> 1144
Pro Cys Cys Phe His Lys Pro His Ala Ser His Ile Met Asn Phe Leu
  1      5      10      15
Ile Arg Ile Gln Cys Ile Tyr Leu Pro Lys Ile Val Cys Ala Tyr Ser
  20      25      30
Lys Tyr Glu Gln Phe Leu Asn Asn Gly Ser Ile Ile Phe Val Gln Asn
  35      40      45
Ala Lys Asn Trp Gly Gln Ala Trp Trp His Thr Pro Val Ile Pro Ala
  50      55      60
Leu Trp Glu Ala Lys Val Gly Xaa Ser Pro Glu Val Arg Ser Leu Arg
  65      70      75      80
Pro Ala Trp Pro Ala Trp
      85

```

```
<210> 1145
<211> 133
<212> PRT
<213> Homo sapiens
```

```

<400> 1145
Met Trp His Thr Lys Pro Leu Gly Ser Gly Ser Cys Val Pro Leu Leu
  1              5              10              15
Pro Leu Leu Leu Leu Leu Leu Leu Leu Phe Pro Leu Leu Pro Trp Pro

```

20				25				30							
Pro	Pro	Leu	Pro	Pro	Pro	Pro	Pro	Ser	Ser	Leu	His	Pro	Phe	Ala	Pro
		35					40					45			
Ala	Phe	Pro	Ala	Thr	Gly	Ser	Leu	Ser	Ser	Asn	Asn	Ser	Gln	Leu	Leu
	50					55					60				
Ala	Pro	Leu	Arg	Leu	Gln	Asn	Ala	Leu	His	Leu	Phe	Lys	Cys	Phe	Pro
	65				70					75					80
Val	Leu	Phe	Pro	Leu	His	Lys	Ile	Ile	Ser	Phe	His	Pro	Glu	Tyr	Pro
				85					90					95	
Trp	Gln	Ala	Pro	Ile	Phe	Gln	Tyr	Phe	Tyr	Leu	Ser	Ile	Pro	Ser	Ser
			100					105					110		
Ser	Leu	His	Pro	Glu	His	Leu	Gly	His	Ser	Phe	Val	Ser	Thr	Leu	His
		115					120					125			
Ser	Pro	Thr	Arg	Gln											
	130														

<210> 1146

<211> 99

<212> PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

<221> SITE

$\langle 222 \rangle$  (91)

<223> Xaa equals any of the naturally occurring L-amino acids

$\langle 400 \rangle$  1146

Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu Leu Pro Leu Leu  
1 5 10 15

Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp Leu Pro Ala Asp  
20 25 30

Leu Ala Phe Ala Val Arg Ala Leu Cys Cys Lys Arg Ala Leu Arg Ala  
35 40 45

Arg Ala Leu Ala Ala Ala Ala Asp Pro Glu Gly Pro Glu Gly Gly  
50 55 60

Cys Ser Leu Ala Trp Arg Leu Ala Glu Leu Ala Gln Gln Arg Ala Glu  
65 70 75 80

Leu Leu Leu Arg Ser Arg Ala Leu Ala Thr Xaa Arg Arg Ser Ala Arg  
85 90 95

Val Thr Gly

<210> 1147

&lt;211&gt; 455

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1147

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Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu Leu Pro Leu Leu
  1           5           10           15

Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp Leu Pro Ala Asp
      20           25           30

Leu Ala Phe Ala Val Arg Ala Leu Cys Cys Lys Arg Ala Leu Arg Ala
      35           40           45

Arg Ala Leu Ala Ala Ala Ala Asp Pro Glu Gly Pro Glu Gly Pro
      50           55           60

Cys Ile Leu Ala Trp Arg Leu Ala Glu Leu Ala Gln Gln Arg Ala Arg
      65           70           75           80

Asn Phe Leu Leu Arg Ser Arg Ala Leu Ala Thr Gln Arg Arg Ser Ala
      85           90           95

Arg Val Thr Gly Leu Thr Arg Leu Pro Thr Cys Ala Arg Leu Gly Leu
      100          105          110

Gly Thr Arg Arg Arg Arg Gln Arg Arg Gly Glu Arg Trp Arg Arg Arg
      115          120          125

Ala Gly Ser Ala Gly Ser Arg Arg Cys Ser Gly Arg Lys Arg Arg Gly
      130          135          140

Val Cys Arg Arg Gly Arg Cys Arg Gln Arg Trp Arg Ser Arg Ala Pro
      145          150          155          160

Leu Ser Pro Gly Ala Thr Val Ala Leu Leu Leu Pro Ala Gly Pro Glu
      165          170          175

Phe Leu Trp Leu Trp Ile Gly Leu Ala Lys Ala Gly Leu Arg Thr Ala
      180          185          190

Phe Val Pro Thr Ala Leu Arg Arg Gly Pro Leu Leu His Cys Leu Arg
      195          200          205

Ser Cys Gly Ala Arg Ala Leu Val Leu Ala Pro Glu Phe Leu Glu Ser
      210          215          220

Leu Glu Pro Asp Leu Pro Ala Leu Arg Ala Met Gly Leu His Leu Trp
      225          230          235          240

Ala Ala Gly Pro Gly Thr His Pro Ala Gly Ile Ser Asp Leu Leu Ala
      245          250          255

Glu Val Ser Ala Glu Val Asp Gly Pro Val Pro Gly Tyr Leu Ser Ser
      260          265          270

Pro Gln Ser Ile Thr Asp Thr Cys Leu Tyr Ile Phe Thr Ser Gly Thr
      275          280          285

Thr Gly Leu Pro Lys Ala Ala Arg Ile Ser His Leu Lys Ile Leu Gln

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290		295		300
Cys Gln Gly Phe Tyr	Gln Leu Cys Gly Val	His Gln Glu Asp Val	Ile	
305	310	315	320	
Tyr Leu Ala Leu Pro	Leu Tyr His Met Ser	Gly Ser Leu Leu Gly	Ile	
	325	330	335	
Val Gly Cys Met Gly	Ile Gly Ala Thr	Val Val Leu Lys Ser	Lys Phe	
	340	345	350	
Ser Ala Gly Gln Phe	Trp Glu Asp Cys Gln	Gln His Arg Val Thr	Val	
	355	360	365	
Phe Gln Tyr Ile Gly	Glu Leu Cys Arg Tyr	Leu Val Asn Gln Pro	Pro	
	370	375	380	
Ser Lys Ala Glu Arg	Gly His Lys Val Arg	Leu Ala Val Gly Ser	Gly	
	385	390	395	400
Leu Arg Pro Asp Thr	Trp Glu Arg Phe Val	Arg Arg Phe Gly Pro	Leu	
	405	410	415	
Gln Val Leu Glu Thr	Tyr Gly Leu Thr Glu	Gly Asn Val Pro Pro	Ser	
	420	425	430	
Thr Thr Gln Asp Ser	Gly Ala Leu Trp Gly	Val Leu Pro Gly Phe	Thr	
	435	440	445	
Ser Ile Ser Ser Pro	Ser Pro			
	450	455		

&lt;210&gt; 1148

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens.

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (77)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (82)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (83)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (86)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

<221> SITE  
 <222> (91)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (122)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (124)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1148  
 Met Met Leu Ile Pro Met Ala Ser Val Met Ala Val Thr Glu Pro Lys  
   1                  5                  10                  15  
 Trp Val Ser Val Trp Ser Arg Phe Leu Trp Val Thr Leu Leu Ser Met  
                   20                  25                  30  
 Val Leu Gly Ser Leu Leu Ala Leu Leu Leu Pro Leu Gly Ala Val Glu  
           35                  40                  45  
 Glu Gln Cys Leu Ala Val Leu Lys Gly Leu Tyr Leu Leu Arg Ser Lys  
   50                  55                  60  
 Pro Asp Arg Ala Gln His Ala Ala Pro Ser Ala Pro Xaa Arg Pro Arg  
   65                  70                  75                  80  
 Ser Xaa Xaa Ser Pro Xaa Gly Ala Arg Arg Xaa Leu Val Ala Lys Thr  
                   85                  90                  95  
 Lys Ala Phe Ser Ser Gly Val Lys Phe Gly Lys Ala Gln Glu Leu Ala  
           100                  105                  110  
 Leu Glu Pro Arg Pro Trp Lys Ile Lys Xaa Ala Xaa Gly Gln Ser Arg  
   115                  120                  125  
 Gly Lys Lys Ala Gln Lys Ser Ser Phe Asn Ala Pro Pro Phe Lys Glu  
   130                  135                  140  
 Trp Asp Pro Gly Asn Phe Pro Gly Asp  
 145                  150

<210> 1149  
 <211> 361  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (2)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (4)



<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (19)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1149

Ala Xaa Pro Xaa Gly Lys Leu Glu Ala Arg Ala Ala Leu Asn Gln Ala  
1 5 10 15

Leu Glu Xaa Lys Arg Gln Gly Lys Arg Glu Lys Ala Gln Lys Leu Phe  
20 25 30

Met His Ala Leu Lys Met Asp Pro Asp Phe Val Asp Ala Leu Thr Glu  
35 40 45

Phe Gly Ile Phe Ser Glu Glu Asp Lys Asp Ile Ile Gln Ala Asp Tyr  
50 55 60

Leu Tyr Thr Arg Ala Leu Thr Ile Ser Pro Tyr His Glu Lys Ala Leu  
65 70 75 80

Val Asn Arg Asp Arg Thr Leu Pro Leu Val Glu Glu Ile Asp Gln Arg  
85 90 95

Tyr Phe Ser Ile Ile Asp Ser Lys Val Lys Lys Val Met Ser Ile Pro  
100 105 110

Lys Gly Asn Ser Ala Leu Arg Arg Val Met Glu Glu Thr Tyr Tyr His  
115 120 125

His Ile Tyr His Thr Val Ala Ile Glu Gly Asn Thr Leu Thr Leu Ser  
130 135 140

Glu Ile Arg His Ile Leu Glu Thr Arg Tyr Ala Val Pro Gly Lys Ser  
145 150 155 160

Leu Glu Glu Gln Asn Glu Val Ile Gly Met His Ala Ala Met Lys Tyr  
165 170 175

Ile Asn Thr Thr Leu Val Ser Arg Ile Gly Ser Val Thr Ile Ser Asp  
180 185 190

Val Leu Glu Ile His Arg Arg Val Leu Gly Tyr Val Asp Pro Val Glu  
195 200 205

Ala Gly Arg Phe Arg Thr Thr Gln Val Leu Val Gly His His Ile Pro  
210 215 220

Pro His Pro Gln Asp Val Glu Lys Gln Met Gln Glu Phe Val Gln Trp  
225 230 235 240

Leu Asn Ser Glu Glu Ala Met Asn Leu His Pro Val Glu Phe Ala Ala  
245 250 255

Leu Ala His Tyr Lys Leu Val Tyr Ile His Pro Phe Ile Asp Gly Asn  
260 265 270

Gly Arg Thr Ser Arg Leu Leu Met Asn Leu Ile Leu Met Gln Ala Gly

275					280					285					
Tyr	Pro	Pro	Ile	Thr	Ile	Arg	Lys	Glu	Gln	Arg	Ser	Asp	Tyr	Tyr	His
	290					295					300				
Val	Leu	Glu	Ala	Ala	Asn	Glu	Gly	Asp	Val	Arg	Pro	Phe	Ile	Arg	Phe
305					310					315					320
Ile	Ala	Lys	Cys	Thr	Glu	Thr	Thr	Leu	Asp	Thr	Leu	Leu	Phe	Ala	Thr
				325					330					335	
Thr	Glu	Tyr	Ser	Val	Ala	Leu	Pro	Glu	Ala	Gln	Pro	Asn	His	Ser	Gly
			340					345					350		
Phe	Lys	Glu	Thr	Leu	Pro	Val	Lys	Pro							
		355					360								

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<210> 1150
<211> 458
<212> PRT
<213> Homo sapiens
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<400> 1150
Met Met Leu Ile Pro Met Ala Ser Val Met Ala Val Thr Glu Pro Lys
  1          5          10          15
Trp Val Ser Val Trp Ser Arg Phe Leu Trp Val Thr Leu Leu Ser Met
          20          25          30
Val Leu Gly Ser Leu Leu Ala Leu Leu Leu Pro Leu Gly Ala Val Glu
          35          40          45
Glu Gln Cys Leu Ala Val Leu Lys Gly Leu Tyr Leu Leu Arg Ser Lys
          50          55          60
Pro Asp Arg Ala Gln His Ala Ala Thr Lys Cys Thr Ser Pro Ser Thr
  65          70          75          80
Glu Leu Ser Ile Thr Ser Arg Gly Ala Thr Leu Leu Val Ala Lys Thr
          85          90          95
Lys Ala Ser Pro Ala Gly Lys Leu Glu Ala Arg Ala Ala Leu Asn Gln
          100          105          110
Ala Leu Glu Met Lys Arg Gln Gly Lys Arg Glu Lys Ala Gln Lys Leu
          115          120          125
Phe Met His Ala Leu Lys Met Asp Pro Asp Phe Val Asp Ala Leu Thr
          130          135          140
Glu Phe Gly Ile Phe Ser Glu Glu Asp Lys Asp Ile Ile Gln Ala Asp
          145          150          155          160
Tyr Leu Tyr Thr Arg Ala Leu Thr Ile Ser Pro Tyr His Glu Lys Ala
          165          170          175
Leu Val Asn Arg Asp Arg Thr Leu Pro Leu Val Glu Glu Ile Asp Gln
          180          185          190

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Arg Tyr Phe Ser Ile Ile Asp Ser Lys Val Lys Lys Val Met Ser Ile  
 195 200 205  
 Pro Lys Gly Asn Ser Ala Leu Arg Arg Val Met Glu Glu Thr Tyr Tyr  
 210 215 220  
 His His Ile Tyr His Thr Val Ala Ile Glu Gly Asn Thr Leu Thr Leu  
 225 230 235 240  
 Ser Glu Ile Arg His Ile Leu Glu Thr Arg Tyr Ala Val Pro Gly Lys  
 245 250 255  
 Ser Leu Glu Glu Gln Asn Glu Val Ile Gly Met His Ala Ala Met Lys  
 260 265 270  
 Tyr Ile Asn Thr Thr Leu Val Ser Arg Ile Gly Ser Val Thr Ile Ser  
 275 280 285  
 Asp Val Leu Glu Ile His Arg Arg Val Leu Gly Tyr Val Asp Pro Val  
 290 295 300  
 Glu Ala Gly Arg Phe Arg Thr Thr Gln Val Leu Val Gly His His Ile  
 305 310 315 320  
 Pro Pro His Pro Gln Asp Val Glu Lys Gln Met Gln Glu Phe Val Gln  
 325 330 335  
 Trp Leu Asn Ser Glu Glu Ala Met Asn Leu His Pro Val Glu Phe Ala  
 340 345 350  
 Ala Leu Ala His Tyr Lys Leu Val Tyr Ile His Pro Phe Ile Asp Gly  
 355 360 365  
 Asn Gly Arg Thr Ser Arg Leu Leu Met Asn Leu Ile Leu Met Gln Ala  
 370 375 380  
 Gly Tyr Pro Pro Ile Thr Ile Arg Lys Glu Gln Arg Ser Asp Tyr Tyr  
 385 390 395 400  
 His Val Leu Glu Ala Ala Asn Glu Gly Asp Val Arg Pro Phe Ile Arg  
 405 410 415  
 Phe Ile Ala Lys Cys Thr Glu Thr Thr Leu Asp Thr Leu Leu Phe Ala  
 420 425 430  
 Thr Thr Glu Tyr Ser Val Ala Leu Pro Glu Ala Gln Pro Asn His Ser  
 435 440 445  
 Gly Phe Lys Glu Thr Leu Pro Val Lys Pro  
 450 455

&lt;210&gt; 1151

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (46)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1151

Ala Gln Arg Asn Pro Gly Ala Val Pro Ala Val Trp Arg Gln Ala Gly  
 1 5 10 15

Val Thr Phe Thr Ser Ala Lys Gly Arg Ser Ser Pro Tyr Trp Ser Leu  
 20 25 30

His Pro Gln Ile Ile Leu Leu Arg Lys Leu Ser Ser Ser Xaa Gln Lys  
 35 40 45

Pro Arg Ser Ser Ser Ala Gln Cys Gly Arg Asn Ala Ala Ala Gly Leu  
 50 55 60

Pro His Cys Leu Arg Ala Ser Trp Ser Arg Leu Leu Lys Ile Glu Trp  
 65 70 75 80

Gln Val Gly Leu Ala Trp Ala Gly Ala Asp Val Leu Cys Gly His Pro  
 85 90 95

Val Pro Lys Arg Pro Pro Thr Leu Gly Pro Gln Thr Ser Gly Ala Asp  
 100 105 110

Trp His Leu Arg Gly His Ser Pro Thr His Leu Leu Gln  
 115 120 125

&lt;210&gt; 1152

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1152

Met Leu Ser Gly Ser Leu Gly Ser Ala Val Cys Met Ser Ser Gln Pro  
 1 5 10 15

Arg

&lt;210&gt; 1153

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1153

Met Leu Ser Gly Ser Leu Gly Ser Ala Val Cys Met Ser Ser Gln Pro  
 1 5 10 15

Arg

&lt;210&gt; 1154

<211> 254  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (218)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (228)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (240)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1154  
 Glu Thr Arg Leu His His Val Ser Thr Leu Ala Ala Phe Thr Val Arg  
     1                    5                    10                    15  
 Gln Val Gln Gln His Gln Gly Asn Leu Asp Ala Ser Gly Pro Ala Arg  
                     20                    25                    30  
 Asp Leu Val Asp Ala Phe Leu Leu Lys Met Ala Gln Glu Glu Gln Asn  
             35                    40                    45  
 Pro Gly Thr Glu Phe Thr Asn Lys Asn Met Leu Met Thr Val Ile Tyr  
             50                    55                    60  
 Leu Leu Phe Ala Gly Thr Met Thr Val Ser Thr Thr Val Gly Tyr Thr  
     65                    70                    75                    80  
 Leu Leu Leu Leu Met Lys Tyr Pro His Val Gln Lys Trp Val Arg Glu  
                     85                    90                    95  
 Glu Leu Asn Arg Glu Leu Gly Ala Gly Gln Ala Pro Ser Leu Gly Asp  
                     100                    105                    110  
 Arg Thr Arg Ser Leu Thr Pro Thr Arg Phe Cys Met Arg Arg Ser Gly  
             115                    120                    125  
 Cys Trp Arg Trp Cys Pro Trp Glu Tyr Pro Ala Pro Ser Cys Gly Pro  
             130                    135                    140  
 Pro Ala Ser Glu Gly Thr Pro Cys Pro Arg Ala Arg Arg Ser Ser Pro  
     145                    150                    155                    160  
 Ser Leu Ala Pro Ser Cys Met Thr Pro Thr Ser Ser Ser Thr Gln Lys  
                     165                    170                    175  
 Ser Ser Thr Gln Thr Val Ser Trp Met Gln Met Asp Gly Ser Gly Ser  
             180                    185                    190  
 Met Arg Arg Ser Cys Leu Leu Leu Lys Glu Ala Cys Leu Pro Trp Lys  
             195                    200                    205  
 Gly Pro Gly Lys Ser Gly Ala Leu Pro Xaa Leu His His His Pro Thr

210 215 220  
 Ser Leu Leu Xaa Gly Glu Pro Val Pro Ala Gly His Pro Glu Pro Xaa  
 225 230 235 240

Ala His Arg Gln Trp Pro Phe Gln His Ser Pro Ser Leu Pro  
 245 250

<210> 1155  
 <211> 302  
 <212> PRT  
 <213> Homo sapiens

<400> 1155  
 Met Glu Ala Thr Gly Thr Trp Ala Leu Leu Leu Ala Leu Ala Leu Leu  
 1 5 10 15  
 Leu Leu Leu Thr Leu Ala Leu Ser Gly Thr Arg Ala Arg Gly His Leu  
 20 25 30  
 Pro Pro Gly Pro Thr Pro Leu Pro Leu Leu Gly Asn Leu Leu Gln Leu  
 35 40 45  
 Arg Pro Gly Ala Leu Tyr Ser Gly Leu Met Arg Leu Ser Lys Lys Tyr  
 50 55 60  
 Gly Pro Val Phe Thr Ile Tyr Leu Gly Pro Trp Arg Pro Val Val Val  
 65 70 75 80  
 Leu Val Gly Gln Glu Ala Val Arg Glu Ala Leu Gly Gly Gln Ala Glu  
 85 90 95  
 Glu Phe Ser Gly Arg Gly Thr Val Ala Met Leu Glu Gly Thr Phe Asp  
 100 105 110  
 Gly His Gly Val Phe Phe Ser Asn Gly Glu Arg Trp Arg Gln Leu Arg  
 115 120 125  
 Lys Phe Thr Met Leu Ala Leu Arg Asp Leu Gly Met Gly Lys Arg Glu  
 130 135 140  
 Gly Glu Glu Leu Ile Gln Ala Glu Ala Arg Cys Leu Val Glu Thr Phe  
 145 150 155 160  
 Gln Gly Thr Glu Gly Arg Pro Phe Asp Pro Ser Leu Leu Leu Ala Gln  
 165 170 175  
 Ala Thr Ser Asn Val Val Cys Ser Leu Leu Phe Gly Leu Arg Phe Ser  
 180 185 190  
 Tyr Glu Asp Lys Glu Phe Gln Ala Val Val Arg Ala Ala Gly Gly Thr  
 195 200 205  
 Leu Leu Gly Val Ser Ser Gln Gly Gly Gln Val Ser Gly Trp Asp Pro  
 210 215 220  
 Ser Pro Thr Thr Phe Pro Glu Gly Ser Cys Gln Gly Pro Met Arg Thr  
 225 230 235 240

Ser	Cys	Pro	Ser	Pro	His	Arg	Pro	Thr	Arg	Cys	Ser	Pro	Gly	Ser	Cys
				245					250					255	
Gly	Pro	Cys	Gln	Ala	Pro	Thr	Ser	Ser	Ser	Ser	Thr	Thr	Ser	Ala	Pro
			260					265					270		
Trp	Leu	Pro	Ser	Gln	Ser	Gly	Arg	Cys	Ser	Ser	Thr	Arg	Gly	Thr	Trp
		275					280					285			
Met	Leu	Arg	Ala	Pro	His	Val	Thr	Leu	Ser	Met	Pro	Ser	Cys		
	290					295					300				

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<210> 1156
<211> 302
<212> PRT
<213> Homo sapiens
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<400> 1156
Met Glu Ala Thr Gly Thr Trp Ala Leu Leu Leu Ala Leu Ala Leu Leu
  1          5          10          15
Leu Leu Leu Thr Leu Ala Leu Ser Gly Thr Arg Ala Arg Gly His Leu
  20          25          30
Pro Pro Gly Pro Thr Pro Leu Pro Leu Leu Gly Asn Leu Leu Gln Leu
  35          40          45
Arg Pro Gly Ala Leu Tyr Ser Gly Leu Met Arg Leu Ser Lys Lys Tyr
  50          55          60
Gly Pro Val Phe Thr Ile Tyr Leu Gly Pro Trp Arg Pro Val Val Val
  65          70          75          80
Leu Val Gly Gln Glu Ala Val Arg Glu Ala Leu Gly Gly Gln Ala Glu
  85          90          95
Glu Phe Ser Gly Arg Gly Thr Val Ala Met Leu Glu Gly Thr Phe Asp
  100          105          110
Gly His Gly Val Phe Phe Ser Asn Gly Glu Arg Trp Arg Gln Leu Arg
  115          120          125
Lys Phe Thr Met Leu Ala Leu Arg Asp Leu Gly Met Gly Lys Arg Glu
  130          135          140
Gly Glu Glu Leu Ile Gln Ala Glu Ala Arg Cys Leu Val Glu Thr Phe
  145          150          155          160
Gln Gly Thr Glu Gly Arg Pro Phe Asp Pro Ser Leu Leu Leu Ala Gln
  165          170          175
Ala Thr Ser Asn Val Val Cys Ser Leu Leu Phe Gly Leu Arg Phe Ser
  180          185          190
Tyr Glu Asp Lys Glu Phe Gln Ala Val Val Arg Ala Ala Gly Gly Thr
  195          200          205

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Leu Leu Gly Val Ser Ser Gln Gly Gly Gln Val Ser Gly Trp Asp Pro  
 210 215 220  
 Ser Pro Thr Thr Phe Pro Glu Gly Ser Cys Gln Gly Pro Met Arg Thr  
 225 230 235 240  
 Ser Cys Pro Ser Pro His Arg Pro Thr Arg Cys Ser Pro Gly Ser Cys  
 245 250 255  
 Gly Pro Cys Gln Ala Pro Thr Ser Ser Ser Thr Thr Ser Ala Pro  
 260 265 270  
 Trp Leu Pro Ser Gln Ser Gly Arg Cys Ser Ser Thr Arg Gly Thr Trp  
 275 280 285  
 Met Leu Arg Ala Pro His Val Thr Leu Ser Met Pro Ser Cys  
 290 295 300

&lt;210&gt; 1157

&lt;211&gt; 240

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1157

Met Thr Ala Pro Val Pro Ala Pro Arg Ile Leu Leu Pro Leu Leu Leu  
 1 5 10 15

Leu Leu Leu Leu Thr Pro Pro Pro Gly Ala Arg Gly Glu Val Cys Met  
 20 25 30

Ala Ser Arg Gly Leu Ser Leu Phe Pro Glu Ser Cys Pro Asp Phe Cys  
 35 40 45

Cys Gly Thr Cys Asp Asp Gln Tyr Cys Cys Ser Asp Val Leu Lys Lys  
 50 55 60

Phe Val Trp Ser Glu Glu Arg Cys Ala Val Pro Glu Ala Ser Val Pro  
 65 70 75 80

Ala Ser Val Glu Pro Val Glu Gln Leu Gly Ser Ala Leu Arg Phe Arg  
 85 90 95

Pro Gly Tyr Asn Asp Pro Met Ser Gly Phe Gly Ala Thr Leu Ala Val  
 100 105 110

Gly Leu Thr Ile Phe Val Leu Ser Val Val Thr Ile Ile Ile Cys Phe  
 115 120 125

Thr Cys Ser Cys Cys Cys Leu Tyr Lys Thr Cys Arg Arg Pro Arg Pro  
 130 135 140

Val Val Thr Thr Thr Thr Ser Thr Thr Val Val His Ala Pro Tyr Pro  
 145 150 155 160

Gln Pro Pro Ser Val Pro Pro Ser Tyr Pro Gly Pro Ser Tyr Gln Gly  
 165 170 175

Tyr His Thr Met Pro Pro Gln Pro Gly Met Pro Ala Ala Pro Tyr Pro



180							185					190				
Met	Gln	Tyr	Pro	Pro	Pro	Tyr	Pro	Ala	Gln	Pro	Met	Gly	Pro	Pro	Ala	
195							200					205				
Tyr	His	Glu	Thr	Leu	Ala	Gly	Gly	Ala	Ala	Ala	Pro	Tyr	Pro	Ala	Ser	
210							215					220				
Gln	Pro	Pro	Tyr	Asn	Pro	Ala	Tyr	Met	Asp	Ala	Pro	Lys	Ala	Ala	Leu	
225							230					235				240

```
<210> 1158
<211> 240
<212> PRT
<213> Homo sapiens
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<400>	1158															
Met	Thr	Ala	Pro	Val	Pro	Ala	Pro	Arg	Ile	Leu	Leu	Pro	Leu	Leu	Leu	
1				5					10						15	
Leu	Leu	Leu	Leu	Thr	Pro	Pro	Pro	Gly	Ala	Arg	Gly	Glu	Val	Cys	Met	
			20					25					30			
Ala	Ser	Arg	Gly	Leu	Ser	Leu	Phe	Pro	Glu	Ser	Cys	Pro	Asp	Phe	Cys	
		35					40					45				
Cys	Gly	Thr	Cys	Asp	Asp	Gln	Tyr	Cys	Cys	Ser	Asp	Val	Leu	Lys	Lys	
	50					55					60					
Phe	Val	Trp	Ser	Glu	Glu	Arg	Cys	Ala	Val	Pro	Glu	Ala	Ser	Val	Pro	
65					70					75					80	
Ala	Ser	Val	Glu	Pro	Val	Glu	Gln	Leu	Gly	Ser	Ala	Leu	Arg	Phe	Arg	
				85					90					95		
Pro	Gly	Tyr	Asn	Asp	Pro	Met	Ser	Gly	Phe	Gly	Ala	Thr	Leu	Ala	Val	
			100					105					110			
Gly	Leu	Thr	Ile	Phe	Val	Leu	Ser	Val	Val	Thr	Ile	Ile	Ile	Cys	Phe	
		115					120					125				
Thr	Cys	Ser	Cys	Cys	Cys	Leu	Tyr	Lys	Thr	Cys	Arg	Arg	Pro	Arg	Pro	
	130					135					140					
Val	Val	Thr	Thr	Thr	Thr	Ser	Thr	Thr	Val	Val	His	Ala	Pro	Tyr	Pro	
145					150					155					160	
Gln	Pro	Pro	Ser	Val	Pro	Pro	Ser	Tyr	Pro	Gly	Pro	Ser	Tyr	Gln	Gly	
				165					170					175		
Tyr	His	Thr	Met	Pro	Pro	Gln	Pro	Gly	Met	Pro	Ala	Ala	Pro	Tyr	Pro	
			180					185					190			
Met	Gln	Tyr	Pro	Pro	Pro	Tyr	Pro	Ala	Gln	Pro	Met	Gly	Pro	Pro	Ala	
		195					200					205				

Tyr His Glu Thr Leu Ala Gly Gly Ala Ala Ala Pro Tyr Pro Ala Ser  
 210 215 220

Gln Pro Pro Tyr Asn Pro Ala Tyr Met Asp Ala Pro Lys Ala Ala Leu  
 225 230 235 240

<210> 1159  
 <211> 116  
 <212> PRT  
 <213> Homo sapiens

<400> 1159  
 Met Lys Gly Leu Arg Ser Leu Ala Ala Thr Thr Leu Ala Leu Phe Leu  
 1 5 10 15

Val Phe Val Phe Leu Gly Asn Ser Ser Cys Ala Pro Gln Arg Leu Leu  
 20 25 30

Glu Arg Arg Asn Trp Thr Pro Gln Ala Met Leu Tyr Leu Lys Gly Ala  
 35 40 45

Gln Gly Arg Arg Phe Ile Ser Asp Gln Ser Arg Arg Lys Asp Leu Ser  
 50 55 60

Asp Arg Pro Leu Pro Glu Arg Arg Ser Pro Asn Pro Gln Leu Leu Thr  
 65 70 75 80

Ile Pro Glu Ala Ala Thr Ile Leu Leu Ala Ser Leu Gln Lys Ser Pro  
 85 90 95

Glu Asp Glu Glu Lys Asn Phe Asp Gln Thr Arg Phe Leu Glu Asp Ser  
 100 105 110

Leu Leu Asn Trp  
 115

<210> 1160  
 <211> 116  
 <212> PRT  
 <213> Homo sapiens

<400> 1160  
 Met Lys Gly Leu Arg Ser Leu Ala Ala Thr Thr Leu Ala Leu Phe Leu  
 1 5 10 15

Val Phe Val Phe Leu Gly Asn Ser Ser Cys Ala Pro Gln Arg Leu Leu  
 20 25 30

Glu Arg Arg Asn Trp Thr Pro Gln Ala Met Leu Tyr Leu Lys Gly Ala  
 35 40 45

Gln Gly Arg Arg Phe Ile Ser Asp Gln Ser Arg Arg Lys Asp Leu Ser

50                                      55                                      60  
 Asp Arg Pro Leu Pro Glu Arg Arg Ser Pro Asn Pro Gln Leu Leu Thr  
 65                                      70                                      75                                      80  
 Ile Pro Glu Ala Ala Thr Ile Leu Leu Ala Ser Leu Gln Lys Ser Pro  
                                     85                                      90                                      95  
 Glu Asp Glu Glu Lys Asn Phe Asp Gln Thr Arg Phe Leu Glu Asp Ser  
                                     100                                      105                                      110  
 Leu Leu Asn Trp  
                                     115

&lt;210&gt; 1161

&lt;211&gt; 426

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1161

Val Val<sup>-</sup> Pro Phe Ser Gly Met Leu Pro Pro Gly Ala Glu Lys Ala Val  
 1                                      5                                      10                                      15  
 Ala Ser Phe Val Thr Gln Leu Ala Ala Ala Glu Ala Leu Gln Lys Ala  
                                     20                                      25                                      30  
 Pro Asp Val Thr Thr Leu Pro Arg Asn Val Met Phe Val Phe Phe Gln  
                                     35                                      40                                      45  
 Gly Glu Thr Phe Asp Tyr Ile Gly Ser Ser Arg Met Val Tyr Asp Met  
                                     50                                      55                                      60  
 Glu Lys Gly Lys Phe Pro Val Gln Leu Glu Asn Val Asp Ser Phe Val  
                                     65                                      70                                      75                                      80  
 Glu Leu Gly Gln Val Ala Leu Arg Thr Ser Leu Glu Leu Trp Met His  
                                     85                                      90                                      95  
 Thr Asp Pro Val Ser Gln Lys Asn Glu Ser Val Arg Asn Gln Val Glu  
                                     100                                      105                                      110  
 Asp Leu Leu Ala Thr Leu Glu Lys Ser Gly Ala Gly Val Pro Ala Val  
                                     115                                      120                                      125  
 Ile Leu Arg Arg Pro Asn Gln Ser Gln Pro Leu Pro Pro Ser Ser Leu  
                                     130                                      135                                      140  
 Gln Arg Phe Leu Arg Ala Arg Asn Ile Ser Gly Val Val Leu Ala Asp  
 145                                      150                                      155                                      160  
 His Ser Gly Ala Phe His Asn Lys Tyr Tyr Gln Ser Ile Tyr Asp Thr  
                                     165                                      170                                      175  
 Ala Glu Asn Ile Asn Val Ser Tyr Pro Glu Trp Leu Ser Pro Glu Glu  
                                     180                                      185                                      190  
 Asp Leu Asn Phe Val Thr Asp Thr Ala Lys Ala Leu Ala Asp Val Ala  
                                     195                                      200                                      205

Thr Val Leu Gly Arg Ala Leu Tyr Glu Leu Ala Gly Gly Thr Asn Phe  
 210 215 220  
 Ser Asp Thr Val Gln Ala Asp Pro Gln Thr Val Thr Arg Leu Leu Tyr  
 225 230 235 240  
 Gly Phe Leu Ile Lys Ala Asn Asn Ser Trp Phe Gln Ser Ile Leu Arg  
 245 250 255  
 Gln Asp Leu Arg Ser Tyr Leu Gly Asp Gly Pro Leu Gln His Tyr Ile  
 260 265 270  
 Ala Val Ser Ser Pro Thr Asn Thr Thr Tyr Val Val Gln Tyr Ala Leu  
 275 280 285  
 Ala Asn Leu Thr Gly Thr Val Val Asn Leu Thr Arg Glu Gln Cys Gln  
 290 295 300  
 Asp Pro Ser Lys Val Pro Ser Glu Asn Lys Asp Leu Tyr Glu Tyr Ser  
 305 310 315 320  
 Trp Val Gln Gly Pro Leu His Ser Asn Glu Thr Asp Arg Leu Pro Arg  
 325 330 335  
 Cys Val Arg Ser Thr Ala Arg Leu Ala Arg Ala Leu Ser Pro Ala Phe  
 340 345 350  
 Glu Leu Ser Gln Trp Ser Ser Thr Glu Tyr Ser Thr Trp Thr Glu Ser  
 355 360 365  
 Arg Trp Lys Asp Ile Arg Ala Arg Ile Phe Leu Ile Ala Ser Lys Glu  
 370 375 380  
 Leu Glu Leu Ile Thr Leu Thr Val Gly Phe Gly Ile Leu Ile Phe Ser  
 385 390 395 400  
 Leu Ile Val Thr Tyr Cys Ile Asn Ala Lys Ala Asp Val Leu Phe Ile  
 405 410 415  
 Ala Pro Arg Glu Pro Gly Ala Val Ser Tyr  
 420 425

&lt;210&gt; 1162

&lt;211&gt; 417

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1162

Met Ala Thr Ala Gly Gly Gly Ser Gly Ala Asp Pro Gly Ser Arg Gly  
 1 5 10 15  
 Leu Leu Arg Leu Leu Ser Phe Cys Val Leu Leu Ala Gly Leu Cys Arg  
 20 25 30  
 Gly Asn Ser Val Glu Arg Lys Ile Tyr Ile Pro Leu Asn Lys Thr Ala  
 35 40 45

Pro Cys Val Arg Leu Leu Asn Ala Thr His Gln Ile Gly Cys Gln Ser  
 50 55 60  
 Ser Ile Ser Gly Asp Thr Gly Val Ile His Val Val Glu Lys Glu Glu  
 65 70 75 80  
 Asp Leu Gln Trp Val Leu Thr Asp Gly Pro Asn Pro Pro Tyr Met Val  
 85 90 95  
 Leu Leu Glu Ser Lys His Phe Thr Arg Asp Leu Met Glu Lys Leu Lys  
 100 105 110  
 Gly Arg Thr Ser Arg Ile Ala Gly Leu Ala Val Ser Leu Thr Lys Pro  
 115 120 125  
 Ser Pro Ala Ser Gly Phe Ser Pro Ser Val Gln Cys Pro Asn Asp Gly  
 130 135 140  
 Phe Gly Val Tyr Ser Asn Ser Tyr Gly Pro Glu Phe Ala His Cys Arg  
 145 150 155 160  
 Glu Ile Gln Trp Asn Ser Leu Gly Asn Gly Leu Ala Tyr Glu Asp Phe  
 165 170 175  
 Ser Phe Pro Ile Phe Leu Leu Glu Asp Glu Asn Glu Thr Lys Val Ile  
 180 185 190  
 Lys Gln Cys Tyr Gln Asp His Asn Leu Ser Gln Asn Gly Ser Ala Pro  
 195 200 205  
 Thr Phe Pro Leu Cys Ala Met Gln Leu Phe Ser His Met His Ala Val  
 210 215 220  
 Ile Ser Thr Ala Thr Cys Met Arg Arg Ser Ser Ile Gln Ser Thr Phe  
 225 230 235 240  
 Ser Ile Asn Pro Glu Ile Val Cys Asp Pro Leu Ser Asp Tyr Asn Val  
 245 250 255  
 Trp Ser Met Leu Lys Pro Ile Asn Thr Thr Gly Thr Leu Lys Pro Asp  
 260 265 270  
 Asp Arg Val Val Val Ala Ala Thr Arg Leu Asp Ser Arg Ser Phe Phe  
 275 280 285  
 Trp Asn Val Ala Pro Gly Ala Glu Ser Ala Val Ala Ser Phe Val Thr  
 290 295 300  
 Gln Leu Ala Ala Ala Glu Ala Leu Gln Lys Ala Pro Asp Val Thr Thr  
 305 310 315 320  
 Leu Pro Arg Asn Val Met Phe Val Phe Phe Gln Gly Glu Thr Phe Asp  
 325 330 335  
 Tyr Ile Gly Ser Ser Arg Met Val Tyr Asp Met Glu Lys Gly Lys Phe  
 340 345 350  
 Pro Val Gln Leu Glu Asn Val Asp Ser Phe Val Glu Leu Gly Gln Val  
 355 360 365

Ala Leu Arg Thr Ser Leu Glu Leu Trp Met His Thr Asp Pro Val Ser  
 370 375 380

Gln Lys Asn Glu Ser Val Arg Asn Gln Val Glu Asp Leu Leu Ala Thr  
 385 390 395 400

Leu Glu Thr Val Ser Tyr Ala His Leu Asn Leu Gln Gly Gly Glu Val  
 405 410 415

Leu

<210> 1163

<211> 709

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (216)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1163

Met Ala Thr Ala Gly Gly Gly Ser Gly Ala Asp Pro Gly Ser Arg Gly  
 1 5 10 15

Leu Leu Arg Leu Leu Ser Phe Cys Val Leu Leu Ala Gly Leu Cys Arg  
 20 25 30

Gly Asn Ser Val Glu Arg Lys Ile Tyr Ile Pro Leu Asn Lys Thr Ala  
 35 40 45

Pro Cys Val Arg Leu Leu Asn Ala Thr His Gln Ile Gly Cys Gln Ser  
 50 55 60

Ser Ile Ser Gly Asp Thr Gly Val Ile His Val Val Glu Lys Glu Glu  
 65 70 75 80

Asp Leu Gln Trp Val Leu Thr Asp Gly Pro Asn Pro Pro Tyr Met Val  
 85 90 95

Leu Leu Glu Ser Lys His Phe Thr Arg Asp Leu Met Glu Lys Leu Lys  
 100 105 110

Gly Arg Thr Ser Arg Ile Ala Gly Leu Ala Val Ser Leu Thr Lys Pro  
 115 120 125

Ser Pro Ala Ser Gly Phe Ser Pro Ser Val Gln Cys Pro Asn Asp Gly  
 130 135 140

Phe Gly Val Tyr Ser Asn Ser Tyr Gly Pro Glu Phe Ala His Cys Arg  
 145 150 155 160

Glu Ile Gln Trp Asn Ser Leu Gly Asn Gly Leu Ala Tyr Glu Asp Phe  
 165 170 175

Ser Phe Pro Ile Phe Leu Leu Glu Asp Glu Asn Glu Thr Lys Val Ile  
 180 185 190

Lys Gln Cys Tyr Gln Asp His Asn Leu Ser Gln Asn Gly Ser Ala Pro  
 195 200 205  
 Ser Phe Pro Leu Cys Ala Met Xaa Leu Phe Ser His Met His Ala Val  
 210 215 220  
 Ile Ser Thr Ala Thr Cys Met Arg Arg Ser Ser Ile Gln Ser Thr Phe  
 225 230 235 240  
 Ser Ile Asn Pro Glu Ile Val Cys Asp Pro Leu Ser Asp Tyr Asn Val  
 245 250 255  
 Trp Ser Met Leu Lys Pro Ile Asn Thr Thr Gly Thr Leu Lys Pro Asp  
 260 265 270  
 Asp Arg Val Val Val Ala Ala Thr Arg Leu Asp Ser Arg Ser Phe Phe  
 275 280 285  
 Trp Asn Val Ala Pro Gly Ala Glu Ser Ala Val Ala Ser Phe Val Thr  
 290 295 300  
 Gln Leu Ala Ala Ala Glu Ala Leu Gln Lys Ala Pro Asp Val Thr Thr  
 305 310 315 320  
 Leu Pro Arg Asn Val Met Phe Val Phe Phe Gln Gly Glu Thr Phe Asp  
 325 330 335  
 Tyr Ile Gly Ser Ser Arg Met Val Tyr Asp Met Glu Lys Gly Lys Phe  
 340 345 350  
 Pro Val Gln Leu Glu Asn Val Asp Ser Phe Val Glu Leu Gly Gln Val  
 355 360 365  
 Ala Leu Arg Thr Ser Leu Glu Leu Trp Met His Thr Asp Pro Val Ser  
 370 375 380  
 Gln Lys Asn Glu Ser Val Arg Asn Gln Val Glu Asp Leu Leu Ala Thr  
 385 390 395 400  
 Leu Glu Lys Ser Gly Ala Gly Val Pro Ala Val Ile Leu Arg Arg Pro  
 405 410 415  
 Asn Gln Ser Gln Pro Leu Pro Pro Ser Ser Leu Gln Arg Phe Leu Arg  
 420 425 430  
 Ala Arg Asn Ile Ser Gly Val Val Leu Ala Asp His Ser Gly Ala Phe  
 435 440 445  
 His Asn Lys Tyr Tyr Gln Ser Ile Tyr Asp Thr Ala Glu Asn Ile Asn  
 450 455 460  
 Val Ser Tyr Pro Glu Trp Leu Ser Pro Glu Glu Asp Leu Asn Phe Val  
 465 470 475 480  
 Thr Asp Thr Ala Lys Ala Leu Ala Asp Val Ala Thr Val Leu Gly Arg  
 485 490 495  
 Ala Leu Tyr Glu Leu Ala Gly Gly Thr Asn Phe Ser Asp Thr Val Gln  
 500 505 510

Ala Asp Pro Gln Thr Val Thr Arg Leu Leu Tyr Gly Phe Leu Ile Lys  
 515 520 525

Ala Asn Asn Ser Trp Phe Gln Ser Ile Leu Arg Gln Asp Leu Arg Ser  
 530 535 540

Tyr Leu Gly Asp Gly Pro Leu Gln His Tyr Ile Ala Val Ser Ser Pro  
 545 550 555 560

Thr Asn Thr Thr Tyr Val Val Gln Tyr Ala Leu Ala Asn Leu Thr Gly  
 565 570 575

Thr Val Val Asn Leu Thr Arg Glu Gln Cys Gln Asp Pro Ser Lys Val  
 580 585 590

Pro Ser Glu Asn Lys Asp Leu Tyr Glu Tyr Ser Trp Val Gln Gly Pro  
 595 600 605

Leu His Ser Asn Glu Thr Asp Arg Leu Pro Arg Cys Val Arg Ser Thr  
 610 615 620

Ala Arg Leu Ala Arg Ala Leu Ser Pro Ala Phe Glu Leu Ser Gln Trp  
 625 630 635 640

Ser Ser Thr Glu Tyr Ser Thr Trp Thr Glu Ser Arg Trp Lys Asp Ile  
 645 650 655

Arg Ala Arg Ile Phe Leu Ile Ala Ser Lys Glu Leu Glu Leu Ile Thr  
 660 665 670

Leu Thr Val Gly Phe Gly Ile Leu Ile Phe Ser Leu Ile Val Thr Tyr  
 675 680 685

Cys Ile Asn Ala Lys Ala Asp Val Leu Phe Ile Ala Pro Arg Glu Pro  
 690 695 700

Gly Ala Val Ser Tyr  
 705

&lt;210&gt; 1164

&lt;211&gt; 230

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1164

Met Thr Gly Leu Tyr Glu Leu Val Trp Arg Val Leu His Ala Leu Leu  
 1 5 10 15

Cys Leu His Arg Thr Leu Thr Ser Trp Leu Arg Val Arg Phe Gly Thr  
 20 25 30

Trp Asn Trp Ile Trp Arg Arg Cys Cys Arg Ala Ala Ser Ala Ala Val  
 35 40 45

Leu Ala Pro Leu Gly Phe Thr Leu Arg Lys Pro Pro Ala Val Gly Arg  
 50 55 60



Asn Arg Arg His His Arg His Pro Arg Gly Gly Ser Cys Leu Ala Ala  
 65 70 75 80  
 Ala His His Arg Met Arg Trp Arg Ala Asp Gly Arg Ser Leu Glu Lys  
 85 90 95  
 Leu Pro Val His Met Gly Leu Val Ile Thr Glu Val Glu Gln Glu Pro  
 100 105 110  
 Ser Phe Ser Asp Ile Ala Ser Leu Val Val Trp Cys Met Ala Val Gly  
 115 120 125  
 Ile Ser Tyr Ile Ser Val Tyr Asp His Gln Gly Ile Phe Lys Arg Asn  
 130 135 140  
 Asn Ser Arg Leu Met Asp Glu Ile Leu Lys Gln Gln Gln Glu Leu Leu  
 145 150 155 160  
 Gly Leu Asp Cys Ser Lys Tyr Ser Pro Glu Phe Ala Asn Ser Asn Asp  
 165 170 175  
 Lys Asp Asp Gln Val Leu Asn Cys His Leu Ala Val Lys Val Leu Ser  
 180 185 190  
 Ala Gly Arg Trp Lys Ser Arg Tyr Cys Lys Ser Cys Ser Gly Leu Leu  
 195 200 205  
 Pro Val Ser Ser Pro Glu Ala Lys Glu Thr His Arg Phe Gly Cys Arg  
 210 215 220  
 Tyr Val Ser Gln Phe Thr  
 225 230

<210> 1165  
 <211> 293  
 <212> PRT  
 <213> Homo sapiens

<400> 1165  
 Met Thr Gly Leu Tyr Glu Leu Val Trp Arg Val Leu His Ala Leu Leu  
 1 5 10 15  
 Cys Leu His Arg Thr Leu Thr Ser Trp Leu Arg Val Arg Phe Gly Thr  
 20 25 30  
 Trp Asn Trp Ile Trp Arg Arg Cys Cys Arg Ala Ala Ser Ala Ala Val  
 35 40 45  
 Leu Ala Pro Leu Gly Phe Thr Leu Arg Lys Pro Pro Ala Val Gly Arg  
 50 55 60  
 Asn Arg Arg His His Arg His Pro Arg Gly Gly Ser Cys Leu Ala Ala  
 65 70 75 80  
 Ala His His Arg Met Arg Trp Arg Ala Asp Gly Arg Ser Leu Glu Lys  
 85 90 95  
 Leu Pro Val His Met Gly Leu Val Ile Thr Glu Val Glu Gln Glu Pro

100					105					110					
Ser	Phe	Ser	Asp	Ile	Ala	Ser	Leu	Val	Val	Trp	Cys	Met	Ala	Val	Gly
		115					120					125			
Ile	Ser	Tyr	Ile	Ser	Val	Tyr	Asp	His	Gln	Gly	Ile	Phe	Lys	Arg	Asn
	130					135					140				
Asn	Ser	Arg	Leu	Met	Asp	Glu	Ile	Leu	Lys	Gln	Gln	Gln	Glu	Leu	Leu
145					150					155					160
Gly	Leu	Asp	Cys	Ser	Lys	Tyr	Ser	Pro	Glu	Phe	Ala	Asn	Ser	Asn	Asp
				165					170					175	
Lys	Asp	Asp	Gln	Val	Leu	Asn	Cys	His	Leu	Ala	Val	Lys	Val	Leu	Ser
			180					185					190		
Pro	Glu	Asp	Gly	Lys	Ala	Asp	Ile	Val	Arg	Ala	Ala	Gln	Asp	Phe	Cys
		195					200					205			
Gln	Leu	Val	Ala	Gln	Lys	Gln	Lys	Arg	Pro	Thr	Asp	Leu	Asp	Val	Asp
	210					215					220				
Thr	Leu	Ala	Ser	Leu	Leu	Ser	Ser	Asn	Gly	Cys	Pro	Asp	Pro	Asp	Leu
225					230					235					240
Val	Leu	Lys	Phe	Gly	Pro	Val	Asp	Ser	Thr	Leu	Gly	Phe	Leu	Pro	Trp
				245					250					255	
His	Ile	Arg	Leu	Thr	Glu	Ile	Val	Ser	Leu	Pro	Ser	His	Leu	Asn	Ile
			260					265					270		
Ser	Tyr	Glu	Asp	Phe	Phe	Ser	Ala	Leu	Arg	Gln	Tyr	Ala	Ala	Cys	Glu
		275					280					285			
Gln	Arg	Leu	Gly	Lys											
		290													

&lt;210&gt; 1166

&lt;211&gt; 173

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (85)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (128)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (146)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.

<220>  
 <221> SITE  
 <222> (160)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (168)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (172)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1166  
 Met Val Glu Glu Pro Gly Arg Phe Leu Pro Leu Trp Leu His Ile Leu  
           1                          5                          10                          15  
 Leu Ile Thr Val Leu Leu Val Leu Ser Gly Ile Phe Ser Gly Leu Asn  
                           20                          25                          30  
 Leu Gly Leu Met Ala Leu Asp Pro Met Glu Leu Arg Ile Val Gln Asn  
                           35                          40                          45  
 Cys Gly Thr Glu Lys Glu Arg Arg Tyr Ala Arg Lys Ile Glu Pro Ile  
                           50                          55                          60  
 Arg Arg Lys Gly Asn Tyr Leu Leu Cys Ser Leu Leu Leu Gly Asn Val  
           65                          70                          75                          80  
 Leu Val Asn Thr Xaa Leu Thr Ile Leu Leu Asp Asn Leu Ile Gly Ser  
                           85                          90                          95  
 Gly Leu Met Ala Val Ala Ser Ser Thr Ile Gly Ile Val Ile Phe Gly  
                           100                          105                          110  
 Glu Ile Leu Pro Gln Ala Leu Cys Ser Arg His Gly Leu Ala Val Xaa  
                           115                          120                          125  
 Ala Asn Thr Ile Leu Leu Thr Lys Phe Phe Met Leu Leu Thr Phe Pro  
           130                          135                          140  
 Leu Xaa Phe Pro Ile Ser Lys Leu Leu Asp Phe Phe Leu Gly Gln Xaa  
           145                          150                          155                          160  
 Ile Arg Thr Val Tyr Asn Arg Xaa Lys Leu Met Xaa Met  
                           165                          170

<210> 1167  
 <211> 173  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (146)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (160)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (168)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (172)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1167

Met	Val	Glu	Glu	Pro	Gly	Arg	Phe	Leu	Pro	Leu	Trp	Leu	His	Ile	Leu
1				5					10					15	

Leu	Ile	Thr	Val	Leu	Leu	Val	Leu	Ser	Gly	Ile	Phe	Ser	Gly	Leu	Asn
			20					25					30		

Leu	Gly	Leu	Met	Ala	Leu	Asp	Pro	Met	Glu	Leu	Arg	Ile	Val	Gln	Asn
	35						40					45			

Cys	Gly	Thr	Glu	Lys	Glu	Arg	Arg	Tyr	Ala	Arg	Lys	Ile	Glu	Pro	Ile
	50					55					60				

Arg	Arg	Lys	Gly	Asn	Tyr	Leu	Leu	Cys	Ser	Leu	Leu	Leu	Gly	Asn	Val
65					70					75					80

Leu	Val	Asn	Thr	Ser	Leu	Thr	Ile	Leu	Leu	Asp	Asn	Leu	Ile	Gly	Ser
				85					90					95	

Gly	Leu	Met	Ala	Val	Ala	Ser	Ser	Thr	Ile	Gly	Ile	Val	Ile	Phe	Gly
			100					105					110		

Glu	Ile	Leu	Pro	Gln	Ala	Leu	Cys	Ser	Arg	His	Gly	Leu	Ala	Val	Gly
	115						120					125			

Ala	Asn	Thr	Ile	Leu	Leu	Thr	Lys	Phe	Phe	Met	Leu	Leu	Thr	Phe	Pro
130						135					140				

Leu	Xaa	Phe	Pro	Ile	Ser	Lys	Leu	Leu	Asp	Phe	Phe	Leu	Gly	Gln	Xaa
145					150					155					160

Ile	Arg	Thr	Val	Tyr	Asn	Arg	Xaa	Lys	Leu	Met	Xaa	Met
				165					170			

&lt;210&gt; 1168

&lt;211&gt; 314

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (93)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1168

Glu	Lys	Ala	Ala	Gly	Ala	Gly	Lys	Ser	His	Leu	Ala	Ile	Val	Gln	Lys	1	5	10	15
Val	Asn	Asn	Glu	Gly	Glu	Gly	Asp	Pro	Phe	Tyr	Glu	Val	Leu	Gly	Leu	20	25	30	
Val	Thr	Leu	Glu	Asp	Val	Ile	Glu	Glu	Ile	Ile	Lys	Ser	Glu	Ile	Leu	35	40	45	
Asp	Glu	Ser	Asp	Met	Tyr	Thr	Asp	Asn	Arg	Ser	Arg	Lys	Arg	Val	Ser	50	55	60	
Glu	Lys	Asn	Lys	Arg	Asp	Phe	Ser	Ala	Phe	Lys	Asp	Ala	Asp	Asn	Glu	65	70	75	80
Leu	Lys	Val	Lys	Ile	Ser	Pro	Gln	Leu	Leu	Leu	Ala	Xaa	His	Arg	Phe	85	90	95	
Leu	Ala	Thr	Glu	Val	Ser	Gln	Phe	Ser	Pro	Ser	Leu	Ile	Ser	Glu	Lys	100	105	110	
Ile	Leu	Leu	Arg	Leu	Leu	Lys	Tyr	Pro	Asp	Val	Ile	Gln	Glu	Leu	Lys	115	120	125	
Phe	Asp	Glu	His	Asn	Lys	Tyr	Tyr	Ala	Arg	His	Tyr	Leu	Tyr	Thr	Arg	130	135	140	
Asn	Lys	Pro	Ala	Asp	Tyr	Phe	Ile	Leu	Ile	Leu	Gln	Gly	Lys	Val	Glu	145	150	155	160
Val	Glu	Ala	Gly	Lys	Glu	Asn	Met	Lys	Phe	Glu	Thr	Gly	Ala	Phe	Ser	165	170	175	
Tyr	Tyr	Gly	Thr	Met	Ala	Leu	Thr	Ser	Val	Pro	Ser	Asp	Arg	Ser	Pro	180	185	190	
Ala	His	Pro	Thr	Pro	Leu	Ser	Arg	Ser	Ala	Ser	Leu	Ser	Tyr	Pro	Asp	195	200	205	
Arg	Thr	Asp	Val	Ser	Thr	Ala	Ala	Thr	Leu	Ala	Gly	Ser	Ser	Asn	Gln	210	215	220	
Phe	Gly	Ser	Ser	Val	Leu	Gly	Gln	Tyr	Ile	Ser	Asp	Phe	Ser	Val	Arg	225	230	235	240
Ala	Leu	Val	Asp	Leu	Gln	Tyr	Ile	Lys	Ile	Thr	Arg	Gln	Gln	Tyr	Gln	245	250	255	
Asn	Gly	Leu	Leu	Ala	Ser	Arg	Met	Glu	Asn	Ser	Pro	Gln	Phe	Pro	Ile	260	265	270	
Asp	Gly	Cys	Thr	Thr	His	Met	Glu	Asn	Leu	Ala	Glu	Lys	Ser	Glu	Leu	275	280	285	
Pro	Val	Val	Asp	Glu	Thr	Thr	Thr	Leu	Leu	Asn	Glu	Arg	Asn	Ser	Leu	290	295	300	

Leu His Lys Ala Ser His Glu Asn Ala Ile  
305 310

<210> 1169

<211> 604

<212> PRT

<213> Homo sapiens

<400> 1169

Met Val Glu Glu Pro Gly Arg Phe Leu Pro Leu Trp Leu His Ile Leu  
1 5 10 15

Leu Ile Thr Val Leu Leu Val Leu Ser Gly Ile Phe Ser Gly Leu Asn  
20 25 30

Leu Gly Leu Met Ala Leu Asp Pro Met Glu Leu Arg Ile Val Gln Asn  
35 40 45

Cys Gly Thr Glu Lys Glu Arg Arg Tyr Ala Arg Lys Ile Glu Pro Ile  
50 55 60

Arg Arg Lys Gly Asn Tyr Leu Leu Cys Ser Leu Leu Leu Gly Asn Val  
65 70 75 80

Leu Val Asn Thr Ser Leu Thr Ile Leu Leu Asp Asn Leu Ile Gly Ser  
85 90 95

Gly Leu Met Ala Val Ala Ser Ser Thr Ile Gly Ile Val Ile Phe Gly  
100 105 110

Glu Ile Leu Pro Gln Ala Leu Cys Ser Arg His Gly Leu Ala Val Gly  
115 120 125

Ala Asn Thr Ile Leu Leu Thr Lys Phe Phe Met Leu Leu Thr Phe Pro  
130 135 140

Leu Ser Phe Pro Ile Ser Lys Leu Leu Asp Phe Phe Leu Gly Gln Glu  
145 150 155 160

Ile Arg Thr Val Tyr Asn Arg Glu Lys Leu Met Glu Met Leu Lys Val  
165 170 175

Thr Glu Pro Tyr Asn Asp Leu Val Lys Glu Glu Leu Asn Met Ile Gln  
180 185 190

Gly Ala Leu Glu Leu Arg Thr Lys Thr Val Glu Asp Ile Met Thr Gln  
195 200 205

Leu Gln Asp Cys Phe Met Ile Arg Ser Asp Ala Ile Leu Asp Phe Asn  
210 215 220

Thr Met Ser Glu Ile Met Glu Ser Gly Tyr Thr Arg Ile Pro Val Phe  
225 230 235 240

Glu Asp Glu Gln Ser Asn Ile Val Asp Ile Leu Tyr Val Lys Asp Leu  
245 250 255

Ala Phe Val Asp Pro Asp Asp Cys Thr Pro Leu Lys Thr Ile Thr Arg

260							265					270				
Phe	Tyr	Asn	His	Pro	Val	His	Phe	Val	Phe	His	Asp	Thr	Lys	Leu	Asp	
		275					280					285				
Ala	Met	Leu	Glu	Glu	Phe	Lys	Lys	Gly	Lys	Ser	His	Leu	Ala	Ile	Val	
	290					295					300					
Gln	Lys	Val	Asn	Asn	Glu	Gly	Glu	Gly	Asp	Pro	Phe	Tyr	Glu	Val	Leu	
305					310					315					320	
Gly	Leu	Val	Thr	Leu	Glu	Asp	Val	Ile	Glu	Glu	Ile	Ile	Lys	Ser	Glu	
				325					330					335		
Ile	Leu	Asp	Glu	Ser	Asp	Met	Tyr	Thr	Asp	Asn	Arg	Ser	Arg	Lys	Arg	
			340					345					350			
Val	Ser	Glu	Lys	Asn	Lys	Arg	Asp	Phe	Ser	Ala	Phe	Lys	Asp	Ala	Asp	
		355					360					365				
Asn	Glu	Leu	Lys	Val	Lys	Ile	Ser	Pro	Gln	Leu	Leu	Leu	Ala	Ala	His	
	370					375					380					
Arg	Phe	Leu	Ala	Thr	Glu	Val	Ser	Gln	Phe	Ser	Pro	Ser	Leu	Ile	Ser	
385					390					395					400	
Glu	Lys	Ile	Leu	Leu	Arg	Leu	Leu	Lys	Tyr	Pro	Asp	Val	Ile	Gln	Glu	
				405					410					415		
Leu	Lys	Phe	Asp	Glu	His	Asn	Lys	Tyr	Tyr	Ala	Arg	His	Tyr	Leu	Tyr	
			420					425					430			
Thr	Arg	Asn	Lys	Pro	Ala	Asp	Tyr	Phe	Ile	Leu	Ile	Leu	Gln	Gly	Lys	
		435					440					445				
Val	Glu	Val	Glu	Ala	Gly	Lys	Glu	Asn	Met	Lys	Phe	Glu	Thr	Gly	Ala	
	450					455					460					
Phe	Ser	Tyr	Tyr	Gly	Thr	Met	Ala	Leu	Thr	Ser	Val	Pro	Ser	Asp	Arg	
465					470					475					480	
Ser	Pro	Ala	His	Pro	Thr	Pro	Leu	Ser	Arg	Ser	Ala	Ser	Leu	Ser	Tyr	
				485					490					495		
Pro	Asp	Arg	Thr	Asp	Val	Ser	Thr	Ala	Ala	Thr	Leu	Ala	Gly	Ser	Ser	
			500					505					510			
Asn	Gln	Phe	Gly	Ser	Ser	Val	Leu	Gly	Gln	Tyr	Ile	Ser	Asp	Phe	Ser	
		515					520					525				
Val	Arg	Ala	Leu	Val	Asp	Leu	Gln	Tyr	Ile	Lys	Ile	Thr	Arg	Gln	Gln	
	530					535					540					
Tyr	Gln	Asn	Gly	Leu	Leu	Ala	Ser	Arg	Met	Glu	Asn	Ser	Pro	Gln	Phe	
545					550					555					560	
Pro	Ile	Asp	Gly	Cys	Thr	Thr	His	Met	Glu	Asn	Leu	Ala	Glu	Lys	Ser	
				565					570					575		
Glu	Leu	Pro	Val	Val	Asp	Glu	Thr	Thr	Thr	Leu	Leu	Asn	Glu	Arg	Asn	

580 585 590  
 Ser Leu Leu His Lys Ala Ser His Glu Asn Ala Ile  
 595 600  
  
 <210> 1170  
 <211> 189  
 <212> PRT  
 <213> Homo sapiens  
  
 <220>  
 <221> SITE  
 <222> (169)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (172)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (180)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1170  
 Met Ala Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu Leu  
 1 5 10 15  
 Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys Arg Ala  
 20 25 30  
 Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu Gly Glu Ala  
 35 40 45  
 Cys Gly Thr Val Gly Leu Leu Leu Glu His Ser Phe Glu Ile Asp Asp  
 50 55 60  
 Ser Ala Asn Phe Arg Lys Arg Gly Ser Leu Leu Trp Asn Gln Gln Asp  
 65 70 75 80  
 Gly Thr Leu Ser Leu Ser Gln Arg Gln Leu Ser Glu Glu Glu Arg Gly  
 85 90 95  
 Arg Leu Arg Asp Val Ala Ala Leu Asn Gly Leu Tyr Arg Val Arg Ile  
 100 105 110  
 Pro Arg Arg Pro Gly Ala Leu Asp Gly Leu Glu Ala Gly Gly Tyr Val  
 115 120 125  
 Ser Ser Phe Val Pro Ala Cys Ser Leu Val Glu Ser His Leu Ser Asp  
 130 135 140  
 Gln Leu Thr Leu His Val Asp Val Ala Gly Asn Val Val Gly Val Ser  
 145 150 155 160  
 Val Val Thr His Pro Met Ala Pro Xaa Ser Pro Xaa Gly Phe Pro Leu  
 165 170 175



Pro Trp Ser Xaa Ala Glu Ile Leu Ala Thr Ile Gln Phe  
 180 185

<210> 1171  
 <211> 117  
 <212> PRT  
 <213> Homo sapiens

<400> 1171  
 Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu Met Ala  
 1 5 10 15  
 Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys Arg Ala Gly Thr  
 20 25 30  
 Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu Gly Glu Ala Cys Gly  
 35 40 45  
 Thr Val Gly Leu Leu Leu Glu His Ser Phe Glu Ile Leu Ala Thr Met  
 50 55 60  
 Pro Val Leu Thr Ser His Pro Pro Thr Pro Ser Pro Cys Ser Leu Gly  
 65 70 75 80  
 Thr Cys Arg Leu Leu Ser Ser Leu Cys Ala Phe Val Pro Gly Gly Leu  
 85 90 95  
 Thr Leu Leu Ser Leu Ala Gly Leu Gly Gly Pro Val Gln Ala Pro Ala  
 100 105 110  
 Ala Pro Pro Ser Leu  
 115

<210> 1172  
 <211> 241  
 <212> PRT  
 <213> Homo sapiens

<400> 1172  
 Met Ala Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu Leu  
 1 5 10 15  
 Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys Arg Ala  
 20 25 30  
 Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu Gly Glu Ala  
 35 40 45  
 Cys Gly Thr Val Gly Leu Leu Leu Glu His Ser Phe Glu Ile Asp Asp  
 50 55 60  
 Ser Ala Asn Phe Arg Lys Arg Gly Ser Leu Leu Trp Asn Gln Gln Asp  
 65 70 75 80  
 Gly Thr Leu Ser Leu Ser Gln Arg Gln Leu Ser Glu Glu Glu Arg Gly

[illegible]

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<210> 1173
<211> 265
<212> PRT
<213> Homo sapiens
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<220>
<221> SITE
<222> (215)
<223> Xaa equals any of the naturally occurring L-amino acids

```

```

<400> 1173
Met Phe Leu Leu Phe Leu Leu Thr Cys Glu Leu Ala Ala Glu Val Ala
  1                               5                               10                               15
Ala Glu Val Glu Lys Ser Ser Asp Gly Pro Gly Ala Ala Gln Glu Pro
                20                25                30
Thr Trp Leu Thr Asp Val Pro Ala Ala Met Glu Phe Ile Ala Ala Thr
      35                40                45
Glu Val Ala Val Ile Gly Phe Phe Gln Asp Leu Glu Ile Pro Ala Val
  50                55                60
Pro Ile Leu His Ser Met Val Gln Lys Phe Pro Gly Val Ser Phe Gly
  65                70                75                80

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Ile	Ser	Thr	Asp	Ser	Glu	Val	Leu	Thr	His	Tyr	Asn	Ile	Thr	Gly	Asn	
				85					90						95	
Thr	Ile	Cys	Leu	Phe	Arg	Leu	Val	Asp	Asn	Glu	Gln	Leu	Asn	Leu	Glu	
			100					105					110			
Asp	Glu	Asp	Ile	Glu	Ser	Ile	Asp	Ala	Thr	Lys	Leu	Ser	Arg	Phe	Ile	
		115					120					125				
Glu	Ile	Asn	Ser	Leu	His	Met	Val	Thr	Glu	Tyr	Asn	Pro	Val	Thr	Val	
	130					135					140					
Ile	Gly	Leu	Phe	Asn	Ser	Val	Ile	Gln	Ile	His	Leu	Leu	Leu	Ile	Met	
145					150					155					160	
Asn	Lys	Ala	Ser	Pro	Glu	Tyr	Glu	Glu	Asn	Met	His	Arg	Tyr	Gln	Lys	
				165					170					175		
Ala	Ala	Lys	Leu	Phe	Gln	Gly	Lys	Ile	Leu	Phe	Ile	Leu	Val	Asp	Ser	
			180					185					190			
Gly	Met	Lys	Glu	Asn	Gly	Lys	Val	Ile	Ser	Phe	Phe	Lys	Leu	Lys	Glu	
		195					200					205				
Ser	Gln	Leu	Pro	Ala	Leu	Xaa	Ile	Tyr	Gln	Thr	Leu	Asp	Asp	Glu	Trp	
	210					215					220					
Asp	Thr	Leu	Pro	Thr	Ala	Glu	Val	Ser	Val	Glu	His	Val	Gln	Asn	Phe	
225					230					235					240	
Cys	Asp	Gly	Phe	Leu	Ser	Gly	Lys	Leu	Leu	Lys	Glu	Asn	Arg	Glu	Ser	
				245					250					255		
Glu	Gly	Lys	Thr	Pro	Lys	Val	Glu	Leu								
			260					265								

```
<210> 1174
<211> 265
<212> PRT
<213> Homo sapiens
```

```

<400> 1174
Met Phe Leu Leu Phe Leu Leu Thr Cys Glu Leu Ala Ala Glu Val Ala
  1             5             10             15
Ala Glu Val Glu Lys Ser Ser Asp Gly Pro Gly Ala Ala Gln Glu Pro
      20             25             30
Thr Trp Leu Thr Asp Val Pro Ala Ala Met Glu Phe Ile Ala Ala Thr
      35             40             45
Glu Val Ala Val Ile Gly Phe Phe Gln Asp Leu Glu Ile Pro Ala Val
      50             55             60
Pro Ile Leu His Ser Met Val Gln Lys Phe Pro Gly Val Ser Phe Gly
  65             70             75             80
Ile Ser Thr Asp Ser Glu Val Leu Thr His Tyr Asn Ile Thr Gly Asn

```

	85		90		95
Thr Ile Cys Leu Phe Arg Leu Val Asp Asn Glu Gln Leu Asn Leu Glu	100		105		110
Asp Glu Asp Ile Glu Ser Ile Asp Ala Thr Lys Leu Ser Arg Phe Ile	115		120		125
Glu Ile Asn Ser Leu His Met Val Thr Glu Tyr Asn Pro Val Thr Val	130		135		140
Ile Gly Leu Phe Asn Ser Val Ile Gln Ile His Leu Leu Leu Ile Met	145		150		155
Asn Lys Ala Ser Pro Glu Tyr Glu Glu Asn Met His Arg Tyr Gln Lys	165		170		175
Ala Ala Lys Leu Phe Gln Gly Lys Ile Leu Phe Ile Leu Val Asp Ser	180		185		190
Gly Met Lys Glu Asn Gly Lys Val Ile Ser Phe Phe Lys Leu Lys Glu	195		200		205
Ser Gln Leu Pro Ala Leu Ala Ile Tyr Gln Thr Leu Asp Asp Glu Trp	210		215		220
Asp Thr Leu Pro Thr Ala Glu Val Ser Val Glu His Val Gln Asn Phe	225		230		235
Cys Asp Gly Phe Leu Ser Gly Lys Leu Leu Lys Glu Asn Arg Glu Ser	245		250		255
Glu Gly Lys Thr Pro Lys Val Glu Leu	260		265		

&lt;210&gt; 1175

&lt;211&gt; 158

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1175

Met Arg Arg Thr Thr Leu Ser Leu Leu Trp Thr Gly Ser Leu Pro Ala	1	5	10	15
Pro Pro Ala Thr Thr Ser Gly Gly Ala Ala Cys Pro Ser Gly Arg Arg	20	25	30	
Tyr Pro Gly Ala Gly Asn Ala Gly Ser Ala Thr Ser Gln Cys Gln Leu	35	40	45	
Thr Arg Cys Gly Ala Trp Leu Ser Ser Thr Ala Arg Ser Val Gly Thr	50	55	60	
Thr Ser Gly Ala Gly His Arg Trp Gly Pro Arg Pro Pro Ala Thr Gly	65	70	75	80
Ala Ala Ser Pro Cys Ile Gln His Gly Ser Ser Pro Arg Ala Gly Thr	85	90	95	

Gly Thr Arg Ile Ala Ala Ala Pro Thr Leu Thr Pro Ala Gln Leu Pro  
 100 105 110  
 Thr Ala Thr Thr Gly Glu Ser Pro Thr Cys Leu Gly His Pro Val Leu  
 115 120 125  
 Thr Pro Arg Ala Gly Ser Arg Thr Thr Cys Pro Lys Cys Ser Thr Pro  
 130 135 140  
 Ala Thr Leu Thr Leu Ala Val Ala Pro Leu Trp Pro Pro Ala  
 145 150 155

<210> 1176  
 <211> 291  
 <212> PRT  
 <213> Homo sapiens

<400> 1176

Met Ser Gln Glu Gly Val Glu Leu Glu Lys Ser Val Arg Arg Leu Arg  
 1 5 10 15  
 Glu Lys Phe His Gly Lys Val Ser Ser Lys Lys Ala Gly Ala Leu Met  
 20 25 30  
 Arg Lys Phe Gly Ser Asp His Thr Gly Val Gly Arg Ser Ile Val Tyr  
 35 40 45  
 Gly Val Lys Gln Lys Asp Gly Gln Glu Leu Ser Asn Asp Leu Asp Ala  
 50 55 60  
 Gln Asp Pro Pro Glu Asp Met Lys Gln Asp Arg Asp Ile Gln Ala Val  
 65 70 75 80  
 Ala Thr Ser Leu Leu Pro Leu Thr Glu Ala Asn Leu Arg Met Phe Gln  
 85 90 95  
 Arg Ala Gln Asp Asp Leu Ile Pro Ala Val Asp Arg Gln Phe Ala Cys  
 100 105 110  
 Ser Ser Cys Asp His Val Trp Trp Arg Arg Val Pro Gln Arg Lys Glu  
 115 120 125  
 Val Ser Arg Cys Arg Lys Cys Arg Lys Arg Tyr Glu Pro Val Pro Ala  
 130 135 140  
 Asp Lys Met Trp Gly Leu Ala Glu Phe His Cys Pro Lys Cys Arg His  
 145 150 155 160  
 Asn Phe Arg Gly Trp Ala Gln Met Gly Ser Pro Ser Pro Cys Tyr Gly  
 165 170 175  
 Cys Gly Phe Pro Val Tyr Pro Thr Arg Ile Leu Pro Pro Arg Trp Asp  
 180 185 190  
 Arg Asp Pro Asp Arg Arg Ser Thr His Thr His Ser Cys Ser Ala Ala  
 195 200 205

Asp Cys Tyr Asn Arg Arg Glu Pro His Val Pro Gly Thr Ser Cys Ala  
 210 215 220  
 His Pro Lys Ser Arg Lys Gln Asn His Leu Pro Lys Val Leu His Pro  
 225 230 235 240  
 Ser Asn Pro His Ile Ser Ser Gly Ser Thr Val Ala Thr Cys Leu Ser  
 245 250 255  
 Gln Gly Gly Leu Leu Glu Asp Leu Asp Asn Leu Ile Leu Glu Asp Leu  
 260 265 270  
 Lys Glu Glu Glu Glu Glu Glu Glu Glu Val Glu Asp Glu Glu Gly Gly  
 275 280 285  
 Pro Arg Glu  
 290

<210> 1177  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 1177  
 Met Arg Gly Thr Gln Leu Val Leu Leu Ala Leu Val Leu Ala Ala Cys  
 1 5 10 15  
 Gly Glu Leu Ala Pro Ala Leu Arg Cys Tyr Val Cys Pro Glu Pro Thr  
 20 25 30  
 Gly Val Ser Asp Cys Val Thr Ile Ala Thr Cys Thr Thr Asn Glu Thr  
 35 40 45  
 Met Cys Lys Thr Thr Leu Tyr Ser Arg Glu Ile Val Tyr Pro Phe Gln  
 50 55 60  
 Gly Asp Ser Thr Val Thr Lys Ser Cys Ala Ser Lys Cys Lys Pro Ser  
 65 70 75 80  
 Asp Val Asp Gly Ile Gly Gln Thr Leu Pro Val Ser Cys Cys Asn Thr  
 85 90 95  
 Glu Leu Cys Asn Val Asp Gly Ala Pro Ala Leu Asn Ser Leu His Cys  
 100 105 110  
 Gly Ala Leu Thr Leu Leu Pro Leu Leu Ser Leu Arg Leu  
 115 120 125

<210> 1178  
 <211> 6  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (4)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1178

Gly Thr Gln Xaa Ala Leu  
1 5

<210> 1179

<211> 125

<212> PRT

<213> Homo sapiens

<400> 1179

Met Arg Gly Thr Gln Leu Val Leu Leu Ala Leu Val Leu Ala Ala Cys  
1 5 10 15

Gly Glu Leu Ala Pro Ala Leu Arg Cys Tyr Val Cys Pro Glu Pro Thr  
20 25 30

Gly Val Ser Asp Cys Val Thr Ile Ala Thr Cys Thr Thr Asn Glu Thr  
35 40 45

Met Cys Lys Thr Thr Leu Tyr Ser Arg Glu Ile Val Tyr Pro Phe Gln  
50 55 60

Gly Asp Ser Thr Val Thr Lys Ser Cys Ala Ser Lys Cys Lys Pro Ser  
65 70 75 80

Asp Val Asp Gly Ile Gly Gln Thr Leu Pro Val Ser Cys Cys Asn Thr  
85 90 95

Glu Leu Cys Asn Val Asp Gly Ala Pro Ala Leu Asn Ser Leu His Cys  
100 105 110

Gly Ala Leu Thr Leu Leu Pro Leu Leu Ser Leu Arg Leu  
115 120 125

<210> 1180

<211> 132

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (104)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (120)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1180

Met Pro Asp Val Gln Gly Pro Trp His Pro Ala His Pro Pro Ile Pro  
1 5 10 15

Ser Ala Ala Leu Cys Leu Leu Trp Pro His Cys Leu Ala Ala Pro Lys

20 25 30  
 Tyr Ala Arg Pro Arg Cys Leu Leu Val Phe Val Leu Cys Asp Arg Ser  
 35 40 45  
 Ala Trp Asn Ile Leu Leu Tyr Ser Val Gly Ser Lys Val Ser Gly Leu  
 50 55 60  
 Cys Ser Asn Cys Ser Leu Val Pro Gly Val Val Ala His Thr Cys Asn  
 65 70 75 80  
 Pro Lys Val Pro Leu Gly Leu Gln Gly Cys Glu Leu Pro Cys Pro Ala  
 85 90 95  
 Glu His Leu Ile Phe Ser Lys Xaa Leu Ser Ser Cys Ala Thr Trp Ala  
 100 105 110  
 His Cys Phe Leu Gly Leu Ser Xaa Cys Trp Cys Leu His Pro His Pro  
 115 120 125  
 His Pro Ser Trp  
 130

<210> 1181  
 <211> 92  
 <212> PRT  
 <213> Homo sapiens

<400> 1181  
 Ser Gly Leu Ala Trp Ala Leu Leu Leu Ser Leu Pro Gly Gly Leu Arg  
 1 5 10 15  
 Ser Ser Ser Ala Arg Leu Pro Pro Glu Pro Phe His Gly Gln Gly Leu  
 20 25 30  
 Ser Ser Val Gly Ala Ile Arg Arg Arg Val Cys Arg Ser Val Arg Leu  
 35 40 45  
 Gly Asp Pro Trp Gly Met Glu Gly Thr Thr Arg Pro Phe Pro Ser Val  
 50 55 60  
 Pro Cys Gln Ala Val Leu Thr Ala Ala Ser Ser Gln Gly Arg Lys Pro  
 65 70 75 80  
 Gly Gln Arg Gln Arg Leu Leu Val Pro Ser Ile Pro  
 85 90

<210> 1182  
 <211> 139  
 <212> PRT  
 <213> Homo sapiens

<400> 1182  
 Thr Phe Arg Leu Val Ser Ala His Leu Lys Thr Arg Lys Leu Ile Asn  
 1 5 10 15



Pro Glu Ala Ala Glu Arg Arg Trp Arg Asp Trp Asp Ser Arg Gln Gly  
                   20                                  25                                  30  
 Trp Leu Ser Val Lys Met Gln Arg Val Ser Gly Leu Leu Ser Trp Thr  
                   35                                  40                                  45  
 Leu Ser Arg Val Leu Trp Leu Ser Gly Leu Ser Glu Pro Gly Ala Ala  
                   50                                  55                                  60  
 Arg Gln Pro Arg Ile Met Glu Glu Lys Ala Leu Glu Val Tyr Asp Leu  
                   65                                  70                                  75                                  80  
 Ile Arg Thr Ile Arg Asp Pro Glu Lys Pro Asn Thr Leu Glu Glu Leu  
                                   85                                  90                                  95  
 Glu Val Val Ser Glu Ser Cys Val Glu Val Gln Glu Ile Asn Glu Glu  
                                   100                                  105                                  110  
 Glu Tyr Leu Val Ile Ile Arg Phe Thr Pro Thr Val Pro His Cys Ser  
                   115                                  120                                  125  
 Leu Ala Thr Leu Ile Val Gly Asn Leu His Phe  
                   130                                  135

&lt;210&gt; 1183

&lt;211&gt; 143

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1183

Met Pro Asp Val Gln Gly Pro Trp His Pro Ala His Pro Pro Ile Pro  
   1                                  5                                  10                                  15  
 Ser Ala Ala Leu Cys Leu Leu Trp Pro His Cys Leu Ala Ala Pro Lys  
                   20                                  25                                  30  
 Tyr Ala Arg Pro Arg Cys Leu Leu Val Phe Val Leu Cys Asp Arg Ser  
                   35                                  40                                  45  
 Ala Trp Asn Ile Leu Leu Tyr Ser Val Gly Ser Lys Val Ser Gly Leu  
                   50                                  55                                  60  
 Cys Ser Asn Cys Ser Leu Val Pro Gly Val Val Ala His Thr Cys Asn  
                   65                                  70                                  75                                  80  
 Pro Lys Val Pro Leu Gly Leu Gln Gly Cys Glu Leu Pro Cys Pro Ala  
                                   85                                  90                                  95  
 Glu His Leu Ile Phe Ser Lys Cys Leu Ser Ser Cys Ala Thr Trp Ala  
                   100                                  105                                  110  
 His Cys Phe Leu Gly Leu Ser Cys Cys Trp Cys Leu His Pro His Pro  
                   115                                  120                                  125  
 His Pro Ser Trp Pro Ala Pro Phe Leu Ser Arg Trp Ala His Val  
                   130                                  135                                  140

&lt;210&gt; 1184

&lt;211&gt; 13

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1184

Met Gly Gln Gly Ala Cys Lys Asn Met Ser Val Gly Ser  
 1 5 10

&lt;210&gt; 1185

&lt;211&gt; 102

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1185

Asn Ser Glu Lys Gly Gln Lys Lys Gln Arg Gly Pro Arg Trp Ile Cys  
 1 5 10 15

Gln Leu Phe Cys Arg Cys Phe Leu Pro Leu Leu Trp Val Val Cys Ser  
 20 25 30

Pro Leu Gln Thr Ser Ala Arg Arg Glu Gly Leu Asn Leu Pro Ala Pro  
 35 40 45

Gln Asp Leu Leu Pro Ser Gly Pro Ser Pro Ala Leu Arg Ser Leu Pro  
 50 55 60

Asp Arg Arg Val Asp Arg Ala Thr Trp Ala Ala Arg Glu Thr His Gly  
 65 70 75 80

Gly Pro Pro Cys Gly Gln Pro Cys Gln Leu Pro Pro Ser Pro Glu Leu  
 85 90 95

His Leu His Leu Glu Glu  
 100

&lt;210&gt; 1186

&lt;211&gt; 259

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (62)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1186

Ala Gly Ala Trp Val Ser Leu Gly Pro Cys Leu Phe Pro Ala Pro Ala  
 1 5 10 15

Asp Ser Glu Gln Arg Pro Trp Val Arg Arg Val Gly Val Gly Pro Leu  
 20 25 30

Pro Ala Glu Pro Gly Gln Gly Glu Leu Gln Glu Ser Pro Leu Cys Pro  
 35 40 45

Cys Ser Trp Asn Val Pro Gln Arg Pro His Leu Lys Gly Xaa Cys Ala  
 50 55 60  
 Gly Gly Val Ala Gln Ser His Thr Ala Ser Thr Leu Ser Ser Gly Thr  
 65 70 75 80  
 Gly Asp Ser Gly Cys Ser Gly Lys Gly Leu Leu Asp Val Thr Tyr Asn  
 85 90 95  
 Ser Val Arg Leu Glu Thr Asp Ala Gly Gly Gly Arg Ala Gly Pro Pro  
 100 105 110  
 Gly Ile Thr Asp His Arg Lys Met Gly Gly Gly Ser Arg Gly Pro Ala  
 115 120 125  
 Pro Thr Pro Ser Cys Leu Thr Leu Leu Ser Cys Pro His Pro Cys Ala  
 130 135 140  
 Phe Val Pro Glu Thr Arg Val Ala Thr Gln Ala Gly Pro Gly Ser Ser  
 145 150 155 160  
 Leu Ile Leu Pro Leu Pro Ser Glu Pro Cys Ser Ser Leu Pro Ser Pro  
 165 170 175  
 Leu Pro Pro Leu Pro Arg Arg Val Thr Ser Asp Arg Ala Pro Leu Ala  
 180 185 190  
 Ile Gln Gly Gly Ser Arg Gly Leu Asp Arg Arg Ala Arg Arg Leu Pro  
 195 200 205  
 Ala Val Ala Gly Ala Ser Cys Pro Cys Arg Val Gly Glu Leu Ser Gly  
 210 215 220  
 Arg Glu Pro Tyr Leu Pro Ser Ala Lys Thr Val Lys Val Tyr Arg Leu  
 225 230 235 240  
 Phe Thr Asp Phe Tyr Leu Asn Cys Lys Ser Ala Asp Phe Val Asn Val  
 245 250 255  
 Leu Gly Val

<210> 1187  
 <211> 119  
 <212> PRT  
 <213> Homo sapiens

<400> 1187  
 Met Gly Gln Gly Ala Cys Gln Lys Tyr Val Cys Trp Phe Leu Asn Val  
 1 5 10 15  
 Val Cys Pro Cys Pro Pro Gly Ser Gly Arg Val His Val Ser Pro His  
 20 25 30  
 Thr Cys Ala Arg Glu Gly Ala Ser Trp Arg Gly Asp Ser Arg Ala Arg  
 35 40 45

Gly Leu His Leu Trp Leu Pro Leu Ala Ser Leu Gly Gly Pro Gly Leu  
     50                    55                    60  
 Pro Gly Ser Gln Ala Leu Ser Cys Gly Thr Trp His Leu Ala Asp Gln  
     65                    70                    75                    80  
 Leu Ala Gly Arg Lys Ile Gly Gly His Arg Ala Gly Gly Gln Cys Pro  
                     85                    90                    95  
 Leu Pro Val Ser Ile Arg Ser Thr Cys His Cys Met Gln Pro Val Gly  
                     100                    105                    110  
 Thr Phe Leu Ala Val Arg Asn  
     115

&lt;210&gt; 1188

&lt;211&gt; 177

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1188

Met Arg Gly Ser Val Glu Cys Thr Trp Gly Trp Gly His Cys Ala Pro  
     1                    5                    10                    15  
 Ser Pro Leu Leu Leu Trp Thr Leu Leu Leu Phe Ala Ala Pro Phe Gly  
                     20                    25                    30  
 Leu Leu Gly Glu Lys Thr Arg Gln Val Ser Leu Glu Val Ile Pro Asn  
                     35                    40                    45  
 Trp Leu Gly Pro Leu Gln Asn Leu Leu His Ile Arg Ala Val Gly Thr  
     50                    55                    60  
 Asn Ser Thr Leu His Tyr Val Trp Ser Ser Leu Gly Pro Leu Ala Val  
     65                    70                    75                    80  
 Val Met Val Ala Thr Asn Thr Pro His Ser Thr Leu Ser Val Asn Trp  
                     85                    90                    95  
 Ser Leu Leu Leu Ser Pro Glu Pro Asp Gly Gly Leu Met Val Leu Pro  
                     100                    105                    110  
 Lys Asp Ser Ile Gln Phe Ser Ser Ala Leu Val Phe Thr Arg Leu Leu  
                     115                    120                    125  
 Glu Phe Asp Ser Thr Asn Val Ser Asp Thr Ala Ala Lys Pro Leu Gly  
     130                    135                    140  
 Arg Pro Tyr Pro Pro Tyr Ser Leu Ala Asp Phe Ser Trp Asn Asn Ile  
     145                    150                    155                    160  
 Thr Asp Ser Leu Asp Pro Ala Thr Leu Ser Ala Thr Phe Gln Gly Thr  
                     165                    170                    175  
 Pro

&lt;210&gt; 1189

&lt;211&gt; 330

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1189

Arg	Pro	Thr	Arg	Pro	Leu	Asn	Cys	Gly	Arg	Met	Arg	Gly	Ser	Val	Glu
1				5					10					15	

Cys	Thr	Trp	Gly	Trp	Gly	His	Cys	Ala	Pro	Ser	Pro	Leu	Leu	Leu	Trp
	20							25					30		

Thr	Leu	Leu	Leu	Phe	Ala	Ala	Pro	Phe	Gly	Leu	Leu	Gly	Glu	Lys	Thr
	35						40					45			

Arg	Gln	Leu	Leu	Glu	Phe	Asp	Ser	Thr	Asn	Val	Ser	Asp	Thr	Ala	Ala
	50					55					60				

Lys	Pro	Leu	Gly	Arg	Pro	Tyr	Pro	Pro	Tyr	Ser	Leu	Ala	Asp	Phe	Ser
65					70					75					80

Trp	Asn	Asn	Ile	Thr	Asp	Ser	Leu	Asp	Pro	Ala	Thr	Leu	Ser	Ala	Thr
			85						90					95	

Phe	Gln	Gly	His	Pro	Met	Asn	Asp	Pro	Thr	Arg	Thr	Phe	Ala	Asn	Gly
			100					105					110		

Ser	Leu	Ala	Phe	Arg	Val	Gln	Ala	Phe	Ser	Arg	Ser	Ser	Arg	Pro	Ala
	115						120					125			

Gln	Pro	Pro	Arg	Leu	Leu	His	Thr	Ala	Asp	Thr	Cys	Gln	Leu	Glu	Val
	130					135					140				

Ala	Leu	Ile	Gly	Ala	Ser	Pro	Arg	Gly	Asn	Arg	Ser	Leu	Phe	Gly	Leu
145					150					155					160

Glu	Val	Ala	Thr	Leu	Gly	Gln	Gly	Pro	Asp	Cys	Pro	Ser	Met	Gln	Glu
				165					170					175	

Gln	His	Ser	Ile	Asp	Asp	Glu	Tyr	Ala	Pro	Ala	Val	Phe	Gln	Leu	Asp
			180					185					190		

Gln	Leu	Leu	Trp	Gly	Ser	Leu	Pro	Ser	Gly	Phe	Ala	Gln	Trp	Arg	Pro
	195						200					205			

Val	Ala	Tyr	Ser	Gln	Lys	Pro	Gly	Gly	Arg	Glu	Ser	Ala	Leu	Pro	Cys
	210					215					220				

Gln	Ala	Ser	Pro	Leu	His	Pro	Ala	Leu	Ala	Tyr	Ser	Leu	Pro	Gln	Ser
225					230					235				240	

Pro	Ile	Val	Arg	Ala	Phe	Phe	Gly	Ser	Gln	Asn	Asn	Phe	Cys	Ala	Phe
				245					250					255	

Asn	Leu	Thr	Phe	Gly	Ala	Ser	Thr	Gly	Pro	Gly	Tyr	Trp	Asp	Gln	His
			260					265					270		

Tyr	Leu	Ser	Trp	Ser	Met	Leu	Leu	Gly	Val	Gly	Phe	Pro	Pro	Val	Asp
	275						280					285			

Gly Leu Ser Pro Leu Val Leu Gly Ile Met Ala Val Ala Leu Gly Ala  
 290 295 300

Pro Gly Leu Met Leu Leu Gly Gly Gly Leu Val Leu Leu Leu His His  
 305 310 315 320

Lys Lys Tyr Ser Glu Tyr Gln Ser Ile Asn  
 325 330

<210> 1190

<211> 95

<212> PRT

<213> Homo sapiens

<400> 1190

Met Ala Ala Ser Arg Trp Ala Arg Lys Ala Val Val Leu Leu Cys Ala  
 1 5 10 15

Ser Asp Leu Leu Leu Leu Leu Leu Leu Leu Pro Pro Pro Gly Ser Cys  
 20 25 30

Ala Ala Glu Ala Arg Pro Gly Arg Pro Thr Ser Leu Pro His Leu Pro  
 35 40 45

Gly Arg Arg Arg Arg Ile Phe Ala Ile Thr Met Met Gln Thr Trp Arg  
 50 55 60

Val Phe Trp Ser Asn Gly Arg Lys Met Met Thr Leu Lys Lys Glu Ile  
 65 70 75 80

Phe Gln Ser Thr Arg Asp Leu Gln His Leu Ser Thr Ser Gln Arg  
 85 90 95

<210> 1191

<211> 234

<212> PRT

<213> Homo sapiens

<400> 1191

Met Ala Ala Ser Arg Trp Ala Arg Lys Ala Val Val Leu Leu Cys Ala  
 1 5 10 15

Ser Asp Leu Leu Leu Leu Leu Leu Leu Leu Pro Pro Pro Gly Ser Cys  
 20 25 30

Ala Ala Glu Gly Ser Pro Gly Thr Pro Asp Glu Ser Thr Pro Pro Pro  
 35 40 45

Arg Lys Lys Lys Lys Asp Ile Arg Asp Tyr Asn Asp Ala Asp Met Ala  
 50 55 60

Arg Leu Leu Glu Gln Trp Glu Lys Asp Asp Asp Ile Glu Glu Gly Asp  
 65 70 75 80

Leu Pro Glu His Lys Arg Pro Ser Ala Pro Val Asp Phe Ser Lys Ile

85 90 95  
 Asp Pro Ser Lys Pro Glu Ser Ile Leu Lys Met Thr Lys Lys Gly Lys  
 100 105 110  
 Thr Leu Met Met Phe Val Thr Val Ser Gly Ser Pro Thr Glu Lys Glu  
 115 120 125  
 Thr Glu Glu Ile Thr Ser Leu Trp Gln Gly Ser Leu Phe Asn Ala Asn  
 130 135 140  
 Tyr Asp Val Gln Arg Phe Ile Val Gly Ser Asp Arg Ala Ile Phe Met  
 145 150 155 160  
 Leu Arg Asp Gly Ser Tyr Ala Trp Glu Ile Lys Asp Phe Leu Val Gly  
 165 170 175  
 Gln Asp Arg Cys Ala Asp Val Thr Leu Glu Gly Gln Val Tyr Pro Gly  
 180 185 190  
 Lys Gly Gly Gly Ser Lys Glu Lys Asn Lys Thr Lys Gln Asp Lys Gly  
 195 200 205  
 Lys Lys Lys Lys Glu Gly Asp Leu Lys Ser Arg Ser Ser Lys Glu Glu  
 210 215 220  
 Asn Arg Ala Gly Asn Lys Arg Glu Asp Leu  
 225 230

&lt;210&gt; 1192

&lt;211&gt; 108

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1192

Met Arg Ala Leu Ser Gly Gly Glu Arg Ser Phe Ser Thr Val Cys Phe  
 1 5 10 15  
 Ile Leu Ser Leu Trp Ser Ile Ala Glu Ser Pro Phe Arg Cys Leu Asp  
 20 25 30  
 Glu Phe Asp Val Tyr Met Asp Met Val Asn Arg Arg Ile Ala Met Asp  
 35 40 45  
 Leu Ile Leu Lys Met Ala Asp Ser Gln Arg Phe Arg Gln Phe Ile Leu  
 50 55 60  
 Leu Thr Pro Gln Ser Met Ser Ser Leu Pro Ser Ser Lys Leu Ile Arg  
 65 70 75 80  
 Ile Leu Arg Met Ser Asp Pro Glu Arg Gly Gln Thr Thr Leu Pro Phe  
 85 90 95  
 Arg Pro Val Thr Gln Glu Glu Asp Asp Asp Gln Arg  
 100 105

<210> 1193  
 <211> 108  
 <212> PRT  
 <213> Homo sapiens

<400> 1193

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Met Arg Ala Leu Ser Gly Gly Glu Arg Ser Phe Ser Thr Val Cys Phe
 1           5           10           15

Ile Leu Ser Leu Trp Ser Ile Ala Glu Ser Pro Phe Arg Cys Leu Asp
           20           25           30

Glu Phe Asp Val Tyr Met Asp Met Val Asn Arg Arg Ile Ala Met Asp
           35           40           45

Leu Ile Leu Lys Met Ala Asp Ser Gln Arg Phe Arg Gln Phe Ile Leu
           50           55           60

Leu Thr Pro Gln Ser Met Ser Ser Leu Pro Ser Ser Lys Leu Ile Arg
           65           70           75           80

Ile Leu Arg Met Ser Asp Pro Glu Arg Gly Gln Thr Thr Leu Pro Phe
           85           90           95

Arg Pro Val Thr Gln Glu Glu Asp Asp Asp Gln Arg
           100          105
  
```

<210> 1194  
 <211> 147  
 <212> PRT  
 <213> Homo sapiens

<220>

<221> SITE

<222> (25)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (30)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (31)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1194

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Arg Leu Leu His Phe Asn Cys His Ser Gly Phe Leu Thr Gln Ser Pro
 1           5           10           15

Tyr Cys Arg Gln Ala Arg His Arg Xaa Leu His Gln Gly Xaa Xaa Pro
           20           25           30

Ala Ala Ala Arg Leu Trp Cys Asp Cys Gln Arg Pro Ala Pro Arg Val
           35           40           45

Ala Arg Thr Glu Leu Gly Arg His Thr Gly Ile His Gly Ser Thr Phe
  
```



50                      55                      60  
 Ser Ser Thr Thr Leu Gly Pro Ile Phe Trp Leu Leu Val Lys Ser Pro  
 65                      70                      75                      80  
 Glu Leu Ala Ala Gln Pro Ser Thr Tyr Leu Ala Val Ala Glu Glu Leu  
                     85                      90                      95  
 Ala Asp Val Ser Gly Lys Tyr Phe Asp Gly Leu Lys Gln Lys Ala Pro  
                     100                      105                      110  
 Ala Pro Glu Ala Glu Asp Glu Glu Val Ala Arg Arg Leu Trp Ala Glu  
                     115                      120                      125  
 Ser Ala Arg Leu Val Gly Leu Glu Ala Pro Ser Val Arg Glu Gln Pro  
                     130                      135                      140  
 Leu Pro Arg  
 145

<210> 1195  
 <211> 240  
 <212> PRT  
 <213> Homo sapiens

<400> 1195  
 Met Ser Arg Tyr Leu Leu Pro Leu Ser Ala Leu Gly Thr Val Ala Gly  
   1                      5                      10                      15  
 Ala Ala Val Leu Leu Lys Asp Tyr Val Thr Gly Gly Ala Cys Pro Ser  
                     20                      25                      30  
 Lys Ala Thr Ile Pro Gly Lys Thr Val Ile Val Thr Gly Ala Asn Thr  
                     35                      40                      45  
 Gly Ile Gly Lys Gln Thr Ala Leu Glu Leu Ala Arg Arg Gly Gly Asn  
                     50                      55                      60  
 Ile Ile Leu Ala Cys Arg Asp Met Glu Lys Cys Glu Ala Ala Ala Lys  
                     65                      70                      75                      80  
 Asp Ile Arg Gly Glu Thr Leu Asn His His Val Asn Ala Arg His Leu  
                     85                      90                      95  
 Asp Leu Ala Ser Leu Lys Ser Ile Arg Glu Phe Ala Ala Lys Ile Ile  
                     100                      105                      110  
 Glu Glu Glu Glu Arg Val Asp Ile Leu Ile Asn Asn Ala Gly Val Met  
                     115                      120                      125  
 Arg Cys Pro His Trp Thr Thr Glu Asp Gly Phe Glu Met Gln Phe Gly  
                     130                      135                      140  
 Val Asn His Leu Gly His Phe Leu Leu Thr Asn Leu Leu Leu Asp Lys  
                     145                      150                      155                      160  
 Leu Lys Ala Ser Ala Pro Ser Arg Ile Ile Asn Leu Ser Ser Leu Ala  
                     165                      170                      175

His Val Ala Gly His Ile Asp Phe Asp Asp Leu Asn Trp Gln Thr Arg  
 180 185 190  
 Lys Tyr Asn Thr Lys Ala Ala Tyr Cys Gln Ser Lys Leu Ala Ile Val  
 195 200 205  
 Leu Phe Thr Lys Glu Leu Ser Arg Arg Leu Gln Gly Thr Gly Ala Leu  
 210 215 220  
 Gly Ser Ala Ser Leu Leu Leu Tyr Ser Glu Pro Arg Ala Ala Phe Pro  
 225 230 235 240

<210> 1196  
 <211> 174  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (142)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (160)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (162)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1196  
 Met Ala Val Ala Arg Leu Ala Ala Val Ala Ala Trp Val Pro Cys Arg  
 1 5 10 15

Ser Trp Gly Trp Ala Ala Val Pro Phe Gly Pro His Arg Gly Leu Ser  
 20 25 30

Val Leu Leu Ala Arg Ile Pro Gln Arg Ala Pro Arg Trp Leu Pro Ala  
 35 40 45

Cys Arg Gln Lys Thr Ser Leu Ser Phe Leu Asn Arg Pro Asp Leu Pro  
 50 55 60

Asn Leu Ala Tyr Lys Lys Leu Lys Gly Lys Ser Pro Gly Ile Ile Phe  
 65 70 75 80

Ile Pro Gly Tyr Leu Ser Tyr Met Asn Gly Thr Lys Ala Leu Ala Ile  
 85 90 95

Glu Glu Phe Cys Lys Ser Leu Gly His Ala Cys Ile Arg Phe Asp Tyr  
 100 105 110

Ser Gly Val Gly Ser Ser Asp Gly Asn Ser Glu Glu Ser Thr Leu Gly  
 115 120 125

Lys Trp Arg Lys Asp Val Leu Ser Ile Ile Asp Asp Leu Xaa Asp Gly  
 130 135 140

Pro Gln Ile Leu Val Gly Ser Ser Leu Gly Gly Trp Leu Met Leu Xaa  
 145 150 155 160

Ala Xaa Asn Cys Thr Thr Arg Glu Gly Leu Ala Leu Ile Gly  
 165 170

<210> 1197  
 <211> 160  
 <212> PRT  
 <213> Homo sapiens

<400> 1197  
 Ile Leu Val Gly Ser Ser Leu Gly Gly Trp Leu Met Leu His Ala Ala  
 1 5 10 15

Ile Ala Arg Pro Glu Lys Val Val Ala Leu Ile Gly Val Ala Thr Ala  
 20 25 30

Ala Asp Thr Leu Val Thr Lys Phe Asn Gln Leu Pro Val Glu Leu Lys  
 35 40 45

Lys Glu Val Glu Met Lys Gly Val Trp Ser Met Pro Ser Lys Tyr Ser  
 50 55 60

Glu Glu Gly Val Tyr Asn Val Gln Tyr Ser Phe Ile Lys Glu Ala Glu  
 65 70 75 80

His His Cys Leu Leu His Ser Pro Ile Pro Val Asn Cys Pro Ile Arg  
 85 90 95

Leu Leu His Gly Met Lys Asp Asp Ile Val Pro Trp His Thr Ser Met  
 100 105 110

Gln Val Ala Asp Arg Val Leu Ser Thr Asp Val Asp Val Ile Leu Arg  
 115 120 125

Lys His Ser Asp His Arg Met Arg Glu Lys Ala Asp Ile Gln Leu Leu  
 130 135 140

Val Tyr Thr Ile Asp Asp Leu Ile Asp Lys Leu Ser Thr Ile Val Asn  
 145 150 155 160

<210> 1198  
 <211> 306  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1198

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Met Ala Val Ala Arg Leu Ala Ala Val Ala Ala Trp Val Pro Cys Arg
 1              5              10              15

Ser Trp Gly Trp Ala Ala Val Pro Phe Gly Pro His Arg Gly Leu Ser
          20              25              30

Val Leu Leu Ala Arg Ile Pro Gln Arg Ala Pro Arg Trp Leu Pro Ala
          35              40              45

Cys Arg Gln Lys Thr Ser Leu Ser Phe Leu Asn Arg Pro Asp Leu Pro
          50              55              60

Asn Leu Ala Tyr Lys Lys Leu Lys Gly Lys Ser Pro Gly Ile Ile Phe
          65              70              75              80

Ile Pro Gly Tyr Leu Ser Tyr Met Asn Gly Thr Lys Ala Leu Ala Ile
          85              90              95

Glu Glu Phe Cys Lys Ser Leu Gly His Ala Cys Ile Arg Phe Asp Tyr
          100              105              110

Ser Gly Val Gly Ser Ser Asp Gly Asn Ser Glu Glu Ser Thr Leu Gly
          115              120              125

Lys Trp Arg Lys Asp Val Leu Ser Ile Ile Asp Asp Leu Ala Asp Gly
          130              135              140

Pro Gln Ile Leu Val Gly Ser Ser Leu Gly Gly Trp Leu Met Leu His
          145              150              155              160

Ala Ala Ile Ala Arg Pro Glu Lys Val Val Ala Leu Ile Gly Val Ala
          165              170              175

Thr Ala Ala Asp Thr Leu Val Thr Lys Phe Asn Gln Leu Pro Val Glu
          180              185              190

Leu Lys Lys Glu Val Glu Met Lys Gly Val Trp Ser Met Pro Ser Lys
          195              200              205

Tyr Ser Glu Glu Gly Val Tyr Asn Val Gln Tyr Ser Phe Ile Lys Glu
          210              215              220

Ala Glu His His Cys Leu Leu His Ser Pro Ile Pro Val Asn Cys Pro
          225              230              235              240

Ile Arg Leu Leu His Gly Met Lys Asp Asp Ile Val Pro Trp His Thr
          245              250              255

Ser Met Gln Val Ala Asp Arg Val Leu Ser Thr Asp Val Asp Val Ile
          260              265              270

Leu Arg Lys His Ser Asp His Arg Met Arg Glu Lys Ala Asp Ile Gln
          275              280              285

Leu Leu Val Tyr Thr Ile Asp Asp Leu Ile Asp Lys Leu Ser Thr Ile
          290              295              300

Val Asn
          305

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<210> 1199
<211> 205
<212> PRT
<213> Homo sapiens
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<220>  
<221> SITE  
<222> (40)  
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (189)
<223> Xaa equals any of the naturally occurring L-amino acids

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<400> 1199																
Met	Gly	Ser	Trp	Ala	Leu	Leu	Trp	Pro	Pro	Leu	Leu	Phe	Thr	Gly	Leu	
1				5					10					15		
Leu	Val	Arg	Pro	Pro	Gly	Thr	Met	Ala	Gln	Ala	Gln	Tyr	Cys	Ser	Val	
			20					25					30			
Asn	Lys	Asp	Ile	Phe	Glu	Val	Xaa	Glu	Asn	Thr	Asn	Val	Thr	Glu	Pro	
		35					40					45				
Leu	Val	Asp	Ile	His	Val	Pro	Glu	Gly	Gln	Glu	Val	Thr	Leu	Gly	Ala	
		50				55					60					
Leu	Ser	Thr	Pro	Phe	Ala	Phe	Arg	Ile	Gln	Gly	Asn	Gln	Leu	Phe	Leu	
	65				70					75					80	
Asn	Val	Thr	Pro	Asp	Tyr	Glu	Glu	Lys	Ser	Leu	Leu	Glu	Ala	Gln	Leu	
				85					90					95		
Leu	Cys	Gln	Ser	Gly	Gly	Thr	Leu	Val	Thr	Gln	Leu	Arg	Val	Phe	Val	
			100					105					110			
Ser	Val	Leu	Asp	Val	Asn	Asp	Asn	Ala	Pro	Glu	Phe	Pro	Phe	Lys	Thr	
		115					120					125				
Lys	Glu	Ile	Arg	Val	Glu	Glu	Asp	Thr	Lys	Val	Asn	Ser	Thr	Val	Ile	
	130					135					140					
Pro	Glu	Thr	Gln	Leu	Gln	Ala	Glu	Asp	Arg	Asp	Lys	Asp	Asp	Ile	Leu	
145					150					155					160	
Val	Tyr	Thr	Leu	Gln	Glu	Met	Thr	Ala	Gly	Ala	Ser	Gly	Leu	Leu	Leu	
				165					170					175		
Leu	Val	Ser	Val	Asn	Arg	Pro	Pro	Glu	Leu	Asp	Arg	Xaa	Leu	Thr	Ser	
			180					185					190			
Thr	Ser	Gly	Glu	His	Asp	Leu	Leu	Leu	Ala	Gly	Ala	Asp				
		195					200					205				

&lt;210&gt; 1200

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1200

Pro Gln Gly Gln Leu Gly Ala Arg Pro Gln Pro His Ala Arg Pro Gln  
 1 5 10 15

Ala Arg Gly Gly Thr Asp Ala Arg Arg Ala Arg Thr Pro Arg Pro Cys  
 20 25 30

Leu Pro Arg Arg Cys Pro Glu Pro Pro Ala Ala Ala Arg Ala Gly Gly  
 35 40 45

Ser Pro Thr Ala Val Arg Ser Ile Leu Thr Lys Glu Arg Arg Pro Glu  
 50 55 60

Gly Gly Tyr Lys Ala Val Trp Phe Gly Glu Asp Ile Gly Thr Glu Ala  
 65 70 75 80

Asp Val Val Val Leu Asn Ala Pro Thr Leu Asp Val Asp Gly Ala Ser  
 85 90 95

Asp Ser Gly Ser Gly Asp Glu Gly Glu Gly Ala Gly Arg Gly Gly Gly  
 100 105 110

Pro Tyr Asp Ala Pro Gly Gly Asp Asp Ser Tyr Ile  
 115 120

&lt;210&gt; 1201

&lt;211&gt; 447

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (260)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1201

Phe Pro Ala Gly Ala Ala Ser Thr Val Leu Ala His Asn Lys Met Leu  
 1 5 10 15

Lys Val Ser Ala Val Leu Cys Val Cys Ala Ala Ala Trp Cys Ser Gln  
 20 25 30

Ser Leu Ala Ala Ala Ala Val Ala Ala Ala Gly Gly Arg Ser Asp  
 35 40 45

Gly Gly Asn Phe Leu Asp Asp Lys Gln Trp Leu Thr Thr Ile Ser Gln  
 50 55 60

Tyr Asp Lys Glu Val Gly Gln Trp Asn Lys Phe Arg Asp Asp Asp Tyr  
 65 70 75 80

Phe Arg Thr Trp Ser Pro Gly Lys Pro Phe Asp Gln Ala Leu Asp Pro  
 85 90 95

Ala Lys Asp Pro Cys Leu Lys Met Lys Cys Ser Arg His Lys Val Cys  
 100 105 110  
 Ile Ala Gln Asp Ser Gln Thr Ala Val Cys Ile Ser His Arg Arg Leu  
 115 120 125  
 Thr His Arg Met Lys Glu Ala Gly Val Asp His Arg Gln Trp Arg Gly  
 130 135 140  
 Pro Ile Leu Ser Thr Cys Lys Gln Cys Pro Val Val Tyr Pro Ser Pro  
 145 150 155 160  
 Val Cys Gly Ser Asp Gly His Thr Tyr Ser Phe Gln Cys Lys Leu Glu  
 165 170 175  
 Tyr Gln Ala Cys Val Leu Gly Lys Gln Ile Ser Val Lys Cys Glu Gly  
 180 185 190  
 His Cys Pro Cys Pro Ser Asp Lys Pro Thr Ser Thr Ser Arg Asn Val  
 195 200 205  
 Lys Arg Ala Cys Ser Asp Leu Glu Phe Arg Glu Val Ala Asn Arg Leu  
 210 215 220  
 Arg Asp Trp Phe Lys Ala Leu His Glu Ser Gly Ser Gln Asn Lys Lys  
 225 230 235 240  
 Thr Lys Thr Leu Leu Arg Pro Glu Arg Ser Arg Phe Asp Thr Ser Ile  
 245 250 255  
 Leu Pro Ile Xaa Lys Asp Ser Leu Gly Trp Met Phe Asn Arg Leu Asp  
 260 265 270  
 Thr Asn Tyr Asp Leu Leu Leu Asp Gln Ser Glu Leu Arg Ser Ile Tyr  
 275 280 285  
 Leu Asp Lys Asn Glu Gln Cys Thr Lys Ala Phe Phe Asn Ser Cys Asp  
 290 295 300  
 Thr Tyr Lys Asp Ser Leu Ile Ser Asn Asn Glu Trp Cys Tyr Cys Phe  
 305 310 315 320  
 Gln Arg Gln Gln Asp Pro Pro Cys Gln Thr Glu Leu Ser Asn Ile Gln  
 325 330 335  
 Lys Arg Gln Gly Val Lys Lys Leu Leu Gly Gln Tyr Ile Pro Leu Cys  
 340 345 350  
 Asp Glu Asp Gly Tyr Tyr Lys Pro Thr Gln Cys His Gly Ser Val Gly  
 355 360 365  
 Gln Cys Trp Cys Val Asp Arg Tyr Gly Asn Glu Val Met Gly Ser Arg  
 370 375 380  
 Ile Asn Gly Val Ala Asp Cys Ala Ile Asp Phe Glu Ile Ser Gly Asp  
 385 390 395 400  
 Phe Ala Ser Gly Asp Phe His Glu Trp Thr Asp Asp Glu Asp Asp Glu  
 405 410 415

Asp Asp Ile Met Asn Asp Glu Asp Glu Ile Glu Asp Asp Asp Glu Asp  
 420 425 430

Glu Gly Asp Asp Asp Asp Gly Gly Asp Asp His Asp Val Tyr Ile  
 435 440 445

<210> 1202

<211> 551

<212> PRT

<213> Homo sapiens

<400> 1202

Met Gly Ser Trp Ala Leu Leu Trp Pro Pro Leu Leu Phe Thr Gly Leu  
 1 5 10 15

Leu Val Arg Pro Pro Gly Thr Met Ala Gln Ala Gln Tyr Cys Ser Val  
 20 25 30

Asn Lys Asp Ile Phe Glu Val Glu Glu Asn Thr Asn Val Thr Glu Pro  
 35 40 45

Leu Val Asp Ile His Val Pro Glu Gly Gln Glu Val Thr Leu Gly Ala  
 50 55 60

Leu Ser Thr Pro Phe Ala Phe Arg Ile Gln Gly Asn Gln Leu Phe Leu  
 65 70 75 80

Asn Val Thr Pro Asp Tyr Glu Glu Lys Ser Leu Leu Glu Ala Gln Leu  
 85 90 95

Leu Cys Gln Ser Gly Gly Thr Leu Val Thr Gln Leu Arg Val Phe Val  
 100 105 110

Ser Val Leu Asp Val Asn Asp Asn Ala Pro Glu Phe Pro Phe Lys Thr  
 115 120 125

Lys Glu Ile Arg Val Glu Glu Asp Thr Lys Val Asn Ser Thr Val Ile  
 130 135 140

Pro Glu Thr Gln Leu Gln Ala Glu Asp Arg Asp Lys Asp Asp Ile Leu  
 145 150 155 160

Phe Tyr Thr Leu Gln Glu Met Thr Ala Gly Ala Ser Asp Tyr Phe Ser  
 165 170 175

Leu Val Ser Val Asn Arg Pro Ala Leu Arg Leu Asp Arg Pro Leu Asp  
 180 185 190

Phe Tyr Glu Arg Pro Asn Met Thr Phe Trp Leu Leu Val Arg Asp Thr  
 195 200 205

Pro Gly Glu Asn Val Glu Pro Ser His Thr Ala Thr Ala Thr Leu Val  
 210 215 220

Leu Asn Val Val Pro Ala Asp Leu Arg Pro Pro Trp Phe Leu Pro Cys  
 225 230 235 240



Thr Phe Ser Asp Gly Tyr Val Cys Ile Gln Ala Gln Tyr His Gly Ala  
 245 250 255  
 Val Pro Thr Gly His Ile Leu Pro Ser Pro Leu Val Leu Arg Pro Gly  
 260 265 270  
 Pro Ile Tyr Ala Glu Asp Gly Asp Arg Gly Ile Asn Gln Pro Ile Ile  
 275 280 285  
 Tyr Ser Ile Phe Arg Gly Asn Val Asn Gly Thr Phe Ile Ile His Pro  
 290 295 300  
 Asp Ser Gly Asn Leu Thr Val Ala Arg Ser Val Pro Ser Pro Met Thr  
 305 310 315 320  
 Phe Leu Leu Leu Val Lys Gly Gln Gln Ala Asp Leu Ala Arg Tyr Ser  
 325 330 335  
 Val Thr Gln Val Thr Val Glu Ala Val Ala Ala Ala Gly Ser Pro Pro  
 340 345 350  
 Arg Phe Pro Gln Ser Leu Tyr Arg Gly Thr Val Ala Arg Gly Ala Gly  
 355 360 365  
 Ala Gly Val Val Val Lys Asp Ala Ala Ala Pro Ser Gln Pro Leu Arg  
 370 375 380  
 Ile Gln Ala Gln Asp Pro Glu Phe Ser Asp Leu Asn Ser Ala Ile Thr  
 385 390 395 400  
 Tyr Arg Ile Thr Asn His Ser His Phe Arg Met Glu Gly Glu Val Val  
 405 410 415  
 Leu Thr Thr Thr Thr Leu Ala Gln Ala Gly Ala Phe Tyr Ala Glu Val  
 420 425 430  
 Ala Ala Pro Arg Arg Thr Ser Ala Ser Arg Trp Trp Ile Trp Arg Pro  
 435 440 445  
 Trp Ala Gly Cys Trp Val Arg Cys Cys Cys Trp Leu Ser Leu Ala Ser  
 450 455 460  
 Pro Ser Leu Ser Thr Ser Thr Met Ala Pro Gly Ser Ser Ala Ala Leu  
 465 470 475 480  
 Ala Lys Leu Arg Ser Pro Ser Pro Lys Ala Leu Thr Thr Arg Arg Ser  
 485 490 495  
 Ser Leu Thr Thr Arg Pro Thr Gly Arg Pro Ser Pro Ala Pro Arg Thr  
 500 505 510  
 Thr Pro Ser Pro Arg Arg His Arg Cys Pro Gln Ser Pro His Pro Pro  
 515 520 525  
 Ala Leu Pro Pro Gln Ala Val Pro Leu Ser Pro Pro Gln Arg Pro Glu  
 530 535 540  
 Leu Ala Glu Ala Pro Arg Arg  
 545 550

<210> 1203  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (18)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (57)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1203  
 Phe Cys Lys Gly Gln Ala Ala Leu Ala Leu Ala Ala Cys Gly Val Leu  
     1                    5                    10                    15  
 Leu Xaa Ser Gly Gly Pro Ala Ala Ala Trp Glu Ala Asp Pro Ala Gly  
                     20                    25                    30  
 Arg Cys Gly Arg Val Pro Thr Ala Arg Gly Arg Ser Trp Arg Lys Pro  
                     35                    40                    45  
 Leu Cys Gly Ala Phe Gln Pro Gly Xaa Ser Trp Pro Glu Ala Pro Arg  
                     50                    55                    60  
 Arg Cys Arg Thr Ser Pro Cys  
                     65                    70

<210> 1204  
 <211> 52  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (4)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (25)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (37)  
 <223> Xaa equals any of the naturally occurring L-amino acids.

<220>  
 <221> SITE  
 <222> (49)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1204  
 Asn Ser Xaa Xaa Asp Pro Asp Asn Val Leu Trp Pro Gly Arg Trp Thr  
     1                    5                    10                    15  
  
 Gln Phe Cys Cys Ile Lys Val Lys Xaa Asp Phe Gln Glu Glu Ala Ser  
                     20                    25                    30  
  
 Val Gly Val Ser Xaa Gly Gly Tyr Arg Ile Gly Val Asp Glu Asn Gln  
             35                    40                    45  
  
 Xaa Lys Gly Cys  
     50

<210> 1205  
 <211> 138  
 <212> PRT  
 <213> Homo sapiens

<400> 1205  
 Val Phe Cys Lys Gly Gln Ala Ala Leu Ala Leu Ala Ala Cys Gly Val  
     1                    5                    10                    15  
  
 Leu Leu Gly Ser Gly Gly Pro Ala Ala Ala Trp Glu Ala Asp Pro Arg  
             20                    25                    30  
  
 Gly Gln Val Trp Pro Cys Pro Asp Arg Ala Arg Thr Glu Val Gly Gly  
             35                    40                    45  
  
 Ser Pro Cys Ala Val Pro Ser Ser Pro Glu Glu Ala Gly Leu Lys Pro  
     50                    55                    60  
  
 Pro Gly Val Ala Glu Ala Ser Pro Cys Gln Arg Pro Lys Pro Arg Leu  
     65                    70                    75                    80  
  
 Gly Phe Tyr Arg Cys Ser Phe Pro Ser Thr Trp Ser Pro Ser Thr Pro  
                     85                    90                    95  
  
 Ser Ser Pro Asn Ser Gln Pro Pro Phe Phe Phe Phe Leu His Ala Ser  
             100                    105                    110  
  
 Lys Val Gln Gly Pro Gln Met Tyr Arg Ser Leu Met Tyr His Pro Ala  
             115                    120                    125  
  
 Arg Glu Pro Ala Asp Tyr Gln Ala Lys Lys  
     130                    135

<210> 1206  
 <211> 193  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (140)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (142)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (147)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (155)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (162)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1206  
 Met Ala Gly Pro Thr Cys Arg Ser Leu Leu Leu Leu Lys Cys Leu Ala  
     1                    5                    10                    15  
 Glu Gly Arg Cys Leu Val Cys Pro Ser Pro Ser Val Val His Cys Leu  
             20                    25                    30  
 Val Ser Val Val Phe Gln Met Thr Ile Leu Arg Asp Leu Glu Lys Leu  
             35                    40                    45  
 Ala Gly Trp His Arg Ile Ala Ile Ile Phe Ile Leu Ser Gly Ile Thr  
             50                    55                    60  
 Gly Asn Leu Ala Ser Ala Ile Phe Leu Pro Tyr Arg Ala Glu Val Gly  
     65                    70                    75                    80  
 Pro Ala Gly Ser Gln Phe Gly Leu Leu Ala Cys Ser Ser Trp Ser Ser  
             85                    90                    95  
 Ser Arg Ala Gly Arg Cys Trp Arg Gly Pro Gly Arg Pro Ser Ser Thr  
             100                    105                    110  
 Ser Arg Pro Ser Cys Ser Ser Trp Ser Ser Val Ala Ser Cys Pro Gly  
             115                    120                    125  
 Ser Thr His Arg Pro His Leu Arg Ala Ser Ser Xaa Ala Xaa Leu Leu  
             130                    135                    140  
 Ala Phe Xaa Phe Leu Pro Tyr Ile Thr Phe Xaa His Gln Ala Thr Ser  
     145                    150                    155                    160  
 Thr Xaa Ser Gly His Leu Ile Pro Gly Gly His Leu Ala Gly Pro Leu  
             165                    170                    175  
 Ala Gly Pro Ser Leu Ala Arg Pro Phe Gly Ala Trp Gly Leu Gly Thr

180 185 190  
 Phe  
  
 <210> 1207  
 <211> 349  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 1207  
 Gly Lys Leu Val Arg Leu Gln Val Pro Val Arg Asn Ser Arg Val Asp  
 1 5 10 15  
 Pro Arg Val Arg Asp Asp Thr Gly Pro Pro Met Asp Lys Ser Asp Leu  
 20 25 30  
 Gly Gln Lys Arg Thr Ser Gly Ala Val Cys His Gln Asp Pro Arg Thr  
 35 40 45  
 Cys Glu Glu Pro Ala Ser Ser Gly Ala His Ile Trp Pro Asp Asp Ile  
 50 55 60  
 Thr Lys Trp Pro Ile Cys Thr Glu Gln Ala Arg Ser Asn His Thr Gly  
 65 70 75 80  
 Phe Leu His Val Asp Cys Glu Ile Lys Gly Arg Pro Cys Cys Ile Gly  
 85 90 95  
 Thr Lys Gly Ser Cys Glu Ile Thr Thr Arg Glu Tyr Cys Glu Phe Met  
 100 105 110  
 His Gly Tyr Phe His Glu Glu Ala Thr Leu Cys Ser Gln Val His Cys  
 115 120 125  
 Leu Asp Lys Val Cys Gly Leu Leu Pro Phe Leu Asn Pro Glu Val Pro  
 130 135 140  
 Asp Gln Phe Tyr Arg Leu Trp Leu Ser Leu Phe Leu His Ala Gly Val  
 145 150 155 160  
 Val His Cys Leu Val Ser Val Val Phe Gln Met Thr Ile Leu Arg Asp  
 165 170 175  
 Leu Glu Lys Leu Ala Gly Trp His Arg Ile Ala Ile Ile Phe Ile Leu  
 180 185 190  
 Ser Gly Ile Thr Gly Asn Leu Ala Ser Ala Ile Phe Leu Pro Tyr Arg  
 195 200 205  
 Ala Glu Val Gly Pro Ala Gly Ser Gln Phe Gly Leu Leu Ala Cys Leu  
 210 215 220  
 Phe Val Glu Leu Phe Gln Ser Trp Pro Leu Leu Glu Arg Pro Trp Lys  
 225 230 235 240  
 Ala Phe Leu Asn Leu Ser Ala Ile Val Leu Phe Leu Phe Ile Cys Gly  
 245 250 255

Leu Leu Pro Trp Ile Asp Asn Ile Ala His Ile Phe Gly Phe Leu Ser  
 260 265 270  
 Gly Leu Leu Leu Ala Phe Ala Phe Leu Pro Tyr Ile Thr Phe Gly Thr  
 275 280 285  
 Ser Asp Lys Tyr Arg Lys Arg Ala Leu Ile Leu Val Ser Leu Leu Ala  
 290 295 300  
 Phe Ala Gly Leu Phe Ala Ala Leu Val Leu Trp Leu Tyr Ile Tyr Pro  
 305 310 315 320  
 Ile Asn Trp Pro Trp Ile Glu His Leu Thr Cys Phe Pro Phe Thr Ser  
 325 330 335  
 Arg Phe Cys Glu Lys Tyr Glu Leu Asp Gln Val Leu His  
 340 345

&lt;210&gt; 1208

&lt;211&gt; 217

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1208

Met Ala Gly Pro Thr Cys Arg Ser Leu Leu Leu Leu Lys Cys Leu Ala  
 1 5 10 15  
 Glu Gly Arg Cys Leu Val Cys Pro Ser Pro Ser Val Val His Cys Leu  
 20 25 30  
 Val Ser Val Val Phe Gln Met Thr Ile Leu Arg Asp Leu Glu Lys Leu  
 35 40 45  
 Ala Gly Trp His Arg Ile Ala Ile Ile Phe Ile Leu Ser Gly Ile Thr  
 50 55 60  
 Gly Asn Leu Ala Ser Ala Ile Phe Leu Pro Tyr Arg Ala Glu Val Gly  
 65 70 75 80  
 Pro Ala Gly Ser Gln Phe Gly Leu Leu Ala Cys Leu Phe Val Glu Leu  
 85 90 95  
 Phe Gln Ser Trp Pro Leu Leu Glu Arg Pro Trp Lys Ala Phe Leu Asn  
 100 105 110  
 Leu Ser Ala Ile Val Leu Phe Leu Phe Ile Cys Gly Leu Leu Pro Trp  
 115 120 125  
 Ile Asp Asn Ile Ala His Ile Phe Gly Phe Leu Ser Gly Leu Leu Leu  
 130 135 140  
 Ala Phe Ala Phe Leu Pro Tyr Ile Thr Phe Gly Thr Ser Asp Lys Tyr  
 145 150 155 160  
 Arg Lys Arg Ala Leu Ile Leu Val Ser Leu Leu Ala Phe Ala Gly Leu  
 165 170 175

Phe Ala Ala Leu Val Leu Trp Leu Tyr Ile Tyr Pro Ile Asn Trp Pro  
180 185 190

Trp Ile Glu His Leu Thr Cys Phe Pro Phe Thr Ser Arg Phe Cys Glu  
195 200 205

Lys Tyr Glu Leu Asp Gln Val Leu His  
210 215

<210> 1209

<211> 207

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (70)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (71)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (72)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (73)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (75)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (81)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (89)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (90)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (95)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (97)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (99)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (105)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (127)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (141)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (169)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (178)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (187)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (194)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1209  
 Met Tyr Tyr Ile Ala His Leu Leu Lys Gly Ala Leu Leu Phe Ile Thr  
 1 5 10 15  
 Ile Ala Leu Ile Gly Ser Gly Trp Ala Phe Ile Lys Tyr Val Leu Ser  
 20 25 30  
 Asp Lys Glu Lys Lys Val Phe Gly Ile Val Ile Pro Met Gln Val Leu  
 35 40 45  
 Ala Thr Trp Pro Thr Ser Ser Ser Ser Pro Ala Arg Lys Ala Pro Ala  
 50 55 60  
 Thr Thr Cys Cys Gly Xaa Xaa Xaa Xaa Pro Xaa Gly Pro His Leu Leu



65		70		75		80
Xaa Cys His Pro Val	Pro Val Val Xaa Xaa His Pro Ala Ser Xaa Gly					
	85		90			95
Xaa Val Xaa Pro Gln Asp Gly Lys Xaa Ala Ser Glu Pro Gly Gln Ser			105			110
	100					
Leu Lys Leu Val Pro Gly Ile Tyr Tyr Val Met Gly His Leu Xaa Arg			120			125
	115					
Leu Leu Ser Pro Gly Ser Ile Gly His Pro Ala Cys Xaa Val Ala Trp			135			140
	130					
Cys Pro Phe Ser Ser Gly Lys Trp Ala Cys Thr Gln Ala Ser Trp Val			150			155
	145					160
Gly Arg Ala Ser Thr Leu Gly Pro Xaa Phe Gly Ala Tyr Arg Ala Tyr			165			170
						175
Lys Xaa Ser Gly Pro Gln Gly Asn Lys Pro Xaa Thr Leu Asn Leu Pro			180			185
						190
Lys Xaa Gly Gln Gly Gly Met Val Lys Met Glu Gln Val Met Asp			195			200
						205

&lt;210&gt; 1210

&lt;211&gt; 553

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1210

Val Asp Pro Arg Val Arg Val Ala Pro Glu Met Ala Val Ser Glu Arg									
1		5				10			15
Arg Gly Leu Gly Arg Gly Ser Pro Ala Glu Trp Gly Gln Arg Leu Leu									
	20				25				30
Leu Val Leu Leu Leu Gly Gly Cys Ser Gly Arg Ile His Arg Leu Ala									
	35				40				45
Leu Thr Gly Glu Lys Arg Ala Asp Ile Gln Leu Asn Ser Phe Gly Phe									
	50				55				60
Tyr Thr Asn Gly Ser Leu Glu Val Glu Leu Ser Val Leu Arg Leu Gly									
	65			70			75		80
Leu Arg Glu Ala Glu Glu Lys Ser Leu Leu Val Gly Phe Ser Leu Ser									
		85				90			95
Arg Val Arg Ser Gly Arg Val Arg Ser Tyr Ser Thr Arg Asp Phe Gln									
	100					105			110
Asp Cys Pro Leu Gln Lys Asn Ser Ser Ser Phe Leu Val Leu Phe Leu									
	115				120			125	
Ile Asn Thr Lys Asp Leu Gln Val Gln Val Arg Lys Tyr Gly Glu Gln									
	130				135			140	

Lys Thr Leu Phe Ile Phe Pro Gly Leu Leu Pro Glu Ala Pro Ser Lys  
 145 150 155 160  
 Pro Gly Leu Pro Lys Pro Gln Ala Thr Val Pro Arg Lys Val Asp Gly  
 165 170 175  
 Gly Gly Thr Ser Ala Ala Ser Lys Pro Lys Ser Thr Pro Ala Val Ile  
 180 185 190  
 Gln Gly Pro Ser Gly Lys Asp Lys Asp Leu Val Leu Gly Leu Ser His  
 195 200 205  
 Leu Asn Asn Ser Tyr Asn Phe Ser Phe His Val Val Ile Gly Ser Gln  
 210 215 220  
 Ala Glu Glu Gly Gln Tyr Ser Leu Asn Phe His Asn Cys Asn Asn Ser  
 225 230 235 240  
 Val Pro Gly Lys Glu His Pro Phe Asp Ile Thr Val Met Ile Arg Glu  
 245 250 255  
 Lys Asn Pro Asp Gly Phe Leu Ser Ala Ala Glu Met Pro Leu Phe Lys  
 260 265 270  
 Leu Tyr Met Val Met Ser Ala Cys Phe Leu Ala Ala Gly Ile Phe Trp  
 275 280 285  
 Val Ser Ile Leu Cys Arg Asn Thr Tyr Ser Val Phe Lys Ile His Trp  
 290 295 300  
 Leu Met Ala Ala Leu Ala Phe Thr Lys Ser Ile Ser Leu Leu Phe His  
 305 310 315 320  
 Ser Ile Asn Tyr Tyr Phe Ile Asn Ser Gln Gly His Pro Ile Glu Gly  
 325 330 335  
 Leu Ala Val Met Tyr Tyr Ile Ala His Leu Leu Lys Gly Ala Leu Leu  
 340 345 350  
 Phe Ile Thr Ile Ala Leu Ile Gly Ser Gly Trp Ala Phe Ile Lys Tyr  
 355 360 365  
 Val Leu Ser Asp Lys Glu Lys Lys Val Phe Gly Ile Val Ile Pro Met  
 370 375 380  
 Gln Val Leu Ala Asn Val Ala Tyr Ile Ile Ile Glu Ser Arg Glu Glu  
 385 390 395 400  
 Gly Ala Ser Asp Tyr Val Leu Trp Lys Glu Ile Leu Phe Leu Val Asp  
 405 410 415  
 Leu Ile Cys Cys Gly Ala Ile Leu Phe Pro Val Val Trp Ser Ile Arg  
 420 425 430  
 His Leu Gln Asp Ala Ser Gly Thr Asp Gly Lys Val Ala Val Asn Leu  
 435 440 445  
 Ala Lys Leu Lys Leu Phe Arg His Tyr Tyr Val Met Val Ile Cys Tyr  
 450 455 460

Val Tyr Phe Thr Arg Ile Ile Ala Ile Leu Leu Gln Val Ala Val Pro  
 465 470 475 480  
 Phe Gln Trp Gln Trp Leu Tyr Gln Leu Leu Val Glu Gly Ser Thr Leu  
 485 490 495  
 Ala Phe Phe Val Leu Thr Gly Tyr Lys Phe Gln Pro Thr Gly Asn Asn  
 500 505 510  
 Pro Tyr Leu Gln Leu Pro Gln Glu Asp Glu Glu Asp Val Gln Met Glu  
 515 520 525  
 Gln Val Met Thr Asp Ser Gly Phe Arg Glu Gly Leu Ser Lys Val Asn  
 530 535 540  
 Lys Thr Ala Ser Gly Arg Glu Leu Leu  
 545 550

<210> 1211  
 <211> 543  
 <212> PRT  
 <213> Homo sapiens

<400> 1211  
 Met Ala Val Ser Glu Arg Arg Gly Leu Gly Arg Gly Ser Pro Ala Glu  
 1 5 10 15  
 Trp Gly Gln Arg Leu Leu Leu Val Leu Leu Leu Gly Gly Cys Ser Gly  
 20 25 30  
 Arg Ile His Arg Leu Ala Leu Thr Gly Glu Lys Arg Ala Asp Ile Gln  
 35 40 45  
 Leu Asn Ser Phe Gly Phe Tyr Thr Asn Gly Ser Leu Glu Val Glu Leu  
 50 55 60  
 Ser Val Leu Arg Leu Gly Leu Arg Glu Ala Glu Glu Lys Ser Leu Leu  
 65 70 75 80  
 Val Gly Phe Ser Leu Ser Arg Val Arg Ser Gly Arg Val Arg Ser Tyr  
 85 90 95  
 Ser Thr Arg Asp Phe Gln Asp Cys Pro Leu Gln Lys Asn Ser Ser Ser  
 100 105 110  
 Phe Leu Val Leu Phe Leu Ile Asn Thr Lys Asp Leu Gln Val Gln Val  
 115 120 125  
 Arg Lys Tyr Gly Glu Gln Lys Thr Leu Phe Ile Phe Pro Gly Leu Leu  
 130 135 140  
 Pro Glu Ala Pro Ser Lys Pro Gly Leu Pro Lys Pro Gln Ala Thr Val  
 145 150 155 160  
 Pro Arg Lys Val Asp Gly Gly Gly Thr Ser Ala Ala Ser Lys Pro Lys  
 165 170 175

Ser Thr Pro Ala Val Ile Gln Gly Pro Ser Gly Lys Asp Lys Asp Leu  
 180 185 190  
 Val Leu Gly Leu Ser His Leu Asn Asn Ser Tyr Asn Phe Ser Phe His  
 195 200 205  
 Val Val Ile Gly Ser Gln Ala Glu Glu Gly Gln Tyr Ser Leu Asn Phe  
 210 215 220  
 His Asn Cys Asn Asn Ser Val Pro Gly Lys Glu His Pro Phe Asp Ile  
 225 230 235 240  
 Thr Val Met Ile Arg Glu Lys Asn Pro Asp Gly Phe Leu Ser Ala Ala  
 245 250 255  
 Glu Met Pro Leu Phe Lys Leu Tyr Met Val Met Ser Ala Cys Phe Leu  
 260 265 270  
 Ala Ala Gly Ile Phe Trp Val Ser Ile Leu Cys Arg Asn Thr Tyr Ser  
 275 280 285  
 Val Phe Lys Ile His Trp Leu Met Ala Ala Leu Ala Phe Thr Lys Ser  
 290 295 300  
 Ile Ser Leu Leu Phe His Ser Ile Asn Tyr Tyr Phe Ile Asn Ser Gln  
 305 310 315 320  
 Gly His Pro Ile Glu Gly Leu Ala Val Met Tyr Tyr Ile Ala His Leu  
 325 330 335  
 Leu Lys Gly Ala Leu Leu Phe Ile Thr Ile Ala Leu Ile Gly Ser Gly  
 340 345 350  
 Trp Ala Phe Ile Lys Tyr Val Leu Ser Asp Lys Glu Lys Lys Val Phe  
 355 360 365  
 Gly Ile Val Ile Pro Met Gln Val Leu Ala Asn Val Ala Tyr Ile Ile  
 370 375 380  
 Ile Glu Ser Arg Glu Glu Gly Ala Ser Asp Tyr Val Leu Trp Lys Glu  
 385 390 395 400  
 Ile Leu Phe Leu Val Asp Leu Ile Cys Cys Gly Ala Ile Leu Phe Pro  
 405 410 415  
 Val Val Trp Ser Ile Arg His Leu Gln Asp Ala Ser Gly Thr Asp Gly  
 420 425 430  
 Lys Val Ala Val Asn Leu Ala Lys Leu Lys Leu Phe Arg His Tyr Tyr  
 435 440 445  
 Val Met Val Ile Cys Tyr Val Tyr Phe Thr Arg Ile Ile Ala Ile Leu  
 450 455 460  
 Leu Gln Val Ala Val Pro Phe Gln Trp Gln Trp Leu Tyr Gln Leu Leu  
 465 470 475 480  
 Val Glu Gly Ser Thr Leu Ala Phe Phe Val Leu Thr Gly Tyr Lys Phe  
 485 490 495

Gln Pro Thr Gly Asn Asn Pro Tyr Leu Gln Leu Pro Gln Glu Asp Glu  
 500 505 510

Glu Asp Val Gln Met Glu Gln Val Met Thr Asp Ser Gly Phe Arg Glu  
 515 520 525

Gly Leu Ser Lys Val Asn Lys Thr Ala Ser Gly Arg Glu Leu Leu  
 530 535 540

<210> 1212  
 <211> 204  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (162)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (204)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1212  
 Met Ala Ala Leu Ala Tyr Asn Leu Gly Lys Arg Glu Ile Asn His Tyr  
 1 5 10 15

Phe Ser Val Arg Ser Ala Lys Val Leu Ala Leu Val Ala Val Leu Leu  
 20 25 30

Leu Ala Ala Cys His Leu Ala Ser Arg Arg Tyr Arg Gly Asn Asp Ser  
 35 40 45

Cys Glu Tyr Leu Leu Ser Ser Gly Arg Phe Leu Gly Glu Lys Val Trp  
 50 55 60

Gln Pro His Ser Cys Met Met His Lys Tyr Lys Ile Ser Glu Ala Lys  
 65 70 75 80

Asn Cys Leu Val Asp Lys His Ile Ala Phe Ile Gly Asp Ser Arg Ile  
 85 90 95

Arg Gln Leu Phe Tyr Ser Phe Val Lys Ile Ile Asn Pro Gln Phe Lys  
 100 105 110

Glu Glu Gly Asn Lys His Glu Asn Ile Pro Phe Glu Asp Lys Thr Ala  
 115 120 125

Ser Val Lys Val Asp Phe Leu Trp His Pro Glu Val Asn Gly Ser Met  
 130 135 140

Lys Gln Cys Ile Lys Val Trp Thr Glu Asp Ser Ile Ala Lys Pro His  
 145 150 155 160

Val Xaa Val Ala Gly Ala Ala Thr Trp Ser Ile Lys Ile His Asn Gly  
 165 170 175

Ser Ser Glu Ala Leu Ser Gln Tyr Lys Met Asn Ile Thr Phe Ile Ala  
                   180                  185                  190

Pro Leu Leu Glu Lys Leu Ala Lys Thr Ser Asp Xaa  
                   195                  200

<210> 1213

<211> 85

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (15)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1213

Glu Leu His Lys Pro Phe Glu Tyr Leu Ile Gln Asp Asn Gly Xaa Val  
       1                  5                  10                  15

Leu Leu Leu Gln Asn Asn Val Tyr Val Cys Met Tyr Ile Trp Phe Ser  
                   20                  25                  30

Ile Tyr Ile Lys Gly Leu Asp Glu Pro Pro Lys Asn Trp Leu Arg Thr  
                   35                  40                  45

Leu Gln Trp Asn Leu Gln Ala Ser Ile Cys Lys Ser Ala Arg His Lys  
                   50                  55                  60

Thr Thr Cys Ser Leu Arg Ala Lys Arg Met Arg Phe Ser Gln Ile Leu  
       65                  70                  75                  80

Ile Ile Leu Asn Val  
                   85

<210> 1214

<211> 289

<212> PRT

<213> Homo sapiens

<400> 1214

Met Ala Ala Leu Ala Tyr Asn Leu Gly Lys Arg Glu Ile Asn His Tyr  
       1                  5                  10                  15

Phe Ser Val Arg Ser Ala Lys Val Leu Ala Leu Val Ala Val Leu Leu  
                   20                  25                  30

Leu Ala Ala Cys His Leu Ala Ser Arg Arg Tyr Arg Gly Asn Asp Ser  
                   35                  40                  45

Cys Glu Tyr Leu Leu Ser Ser Gly Arg Phe Leu Gly Glu Lys Val Trp  
                   50                  55                  60

Gln Pro His Ser Cys Met Met His Lys Tyr Lys Ile Ser Glu Ala Lys  
       65                  70                  75                  80

Asn Cys Leu Val Asp Lys His Ile Ala Phe Ile Gly Asp Ser Arg Ile  
                     85                    90                    95  
 Arg Gln Leu Phe Tyr Ser Phe Val Lys Ile Ile Asn Pro Gln Phe Lys  
                     100                    105                    110  
 Glu Glu Gly Asn Lys His Glu Asn Ile Pro Phe Glu Asp Lys Thr Ala  
                     115                    120                    125  
 Ser Val Lys Val Asp Phe Leu Trp His Pro Glu Val Asn Gly Ser Met  
                     130                    135                    140  
 Lys Gln Cys Ile Lys Val Trp Thr Glu Asp Ser Ile Ala Lys Pro His  
                     145                    150                    155                    160  
 Val Ile Val Ala Gly Ala Ala Thr Trp Ser Ile Lys Ile His Asn Gly  
                     165                    170                    175  
 Ser Ser Glu Ala Leu Ser Gln Tyr Lys Met Asn Ile Thr Ser Ile Ala  
                     180                    185                    190  
 Pro Leu Leu Glu Lys Leu Ala Lys Thr Ser Asp Val Tyr Trp Val Leu  
                     195                    200                    205  
 Gln Asp Pro Val Tyr Glu Asp Leu Leu Ser Glu Asn Arg Lys Met Ile  
                     210                    215                    220  
 Thr Asn Glu Lys Ile Asp Ala Tyr Asn Glu Ala Ala Val Ser Ile Leu  
                     225                    230                    235                    240  
 Asn Ser Ser Thr Arg Asn Ser Lys Ser Asn Val Lys Met Phe Ser Val  
                     245                    250                    255  
 Ser Lys Leu Ile Ala Gln Glu Thr Ile Met Glu Ser Leu Asp Gly Leu  
                     260                    265                    270  
 His Leu Pro Glu Ser Ser Arg Glu Thr Val Arg Asn Phe Tyr Ile Cys  
                     275                    280                    285  
 Gln

&lt;210&gt; 1215

&lt;211&gt; 215

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1215

Cys Glu Val Arg Pro Glu Val Leu Phe Leu Thr Arg His Phe Ile Phe  
     1                    5                    10                    15

His Asp Asn Asn Asn Thr Trp Glu Gly His Tyr Tyr His Tyr Ser Asp  
                     20                    25                    30

Pro Val Cys Lys His Pro Thr Phe Ser Ile Tyr Ala Arg Gly Arg Tyr  
                     35                    40                    45

Ser Arg Gly Val Leu Ser Ser Arg Val Met Gly Gly Thr Glu Phe Val

50                                      55                                      60  
 Phe Lys Val Asn His Met Lys Val Thr Pro Met Asp Ala Ala Thr Ala  
 65                                      70                                      75                                      80  
 Ser Leu Leu Asn Val Phe Asn Gly Asn Glu Cys Gly Ala Glu Gly Ser  
                                     85                                      90                                      95  
 Trp Gln Val Gly Ile Gln Gln Asp Val Thr His Thr Asn Gly Cys Val  
                                     100                                      105                                      110  
 Ala Leu Gly Ile Lys Leu Pro His Thr Glu Tyr Glu Ile Phe Lys Met  
                                     115                                      120                                      125  
 Glu Gln Asp Ala Arg Gly Arg Tyr Leu Leu Phe Asn Gly Gln Arg Pro  
                                     130                                      135                                      140  
 Ser Asp Gly Ser Ser Pro Asp Arg Pro Glu Lys Arg Ala Thr Ser Tyr  
 145                                      150                                      155                                      160  
 Gln Met Pro Leu Val Gln Cys Ala Ser Ser Ser Pro Arg Ala Glu Asp  
                                     165                                      170                                      175  
 Leu Ala Glu Asp Ser Gly Ser Ser Leu Tyr Gly Arg Ala Pro Gly Arg  
                                     180                                      185                                      190  
 His Thr Trp Ser Leu Leu Leu Ala Ala Leu Ala Cys Leu Val Pro Leu  
                                     195                                      200                                      205  
 Leu His Trp Asn Ile Arg Arg  
                                     210                                      215

<210> 1216

<211> 466

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (268)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (458)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (460)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (461)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>



&lt;221&gt; SITE

&lt;222&gt; (463)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1216

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Met Ser Trp Pro Arg Arg Leu Leu Leu Arg Tyr Leu Phe Pro Ala Leu
 1              5              10              15

Leu Leu His Gly Leu Gly Glu Gly Ser Ala Leu Leu His Pro Asp Ser
          20          25          30

Arg Ser His Pro Arg Ser Leu Glu Lys Ser Ala Trp Arg Ala Phe Lys
          35          40          45

Glu Ser Gln Cys His His Met Leu Lys His Leu His Asn Gly Ala Arg
 50          55          60

Ile Thr Val Gln Met Pro Pro Thr Ile Glu Gly His Trp Val Ser Thr
 65          70          75          80

Gly Cys Glu Val Arg Ser Gly Pro Glu Phe Ile Thr Arg Ser Tyr Arg
          85          90          95

Phe Tyr His Asn Asn Thr Phe Lys Ala Tyr Gln Phe Tyr Tyr Gly Ser
          100          105          110

Asn Arg Cys Thr Asn Pro Thr Tyr Thr Leu Ile Ile Arg Gly Lys Ile
          115          120          125

Arg Leu Arg Gln Ala Ser Trp Ile Ile Arg Gly Gly Thr Glu Ala Asp
          130          135          140

Tyr Gln Leu His Asn Val Gln Val Ile Cys His Thr Glu Ala Val Ala
          145          150          155          160

Glu Lys Leu Gly Gln Gln Val Asn Arg Thr Cys Pro Gly Phe Leu Ala
          165          170          175

Asp Gly Gly Pro Trp Val Gln Asp Val Ala Tyr Asp Leu Trp Arg Glu
          180          185          190

Glu Asn Gly Cys Glu Cys Thr Lys Ala Val Asn Phe Ala Met His Glu
          195          200          205

Leu Gln Leu Ile Arg Val Glu Lys Gln Tyr Leu His His Asn Leu Asp
          210          215          220

His Leu Val Glu Glu Leu Phe Leu Gly Asp Ile His Thr Asp Ala Thr
          225          230          235          240

Gln Arg Met Phe Tyr Arg Pro Ser Ser Tyr Gln Pro Pro Leu Gln Asn
          245          250          255

Ala Lys Asn His Asp His Ala Cys Ile Ala Cys Xaa Ile Ile Tyr Arg
          260          265          270

Ser Asp Glu His His Pro Pro Ile Leu Pro Pro Lys Ala Asp Leu Thr
          275          280          285

Ile Gly Leu His Gly Glu Trp Val Ser Gln Arg Cys Glu Val Arg Pro

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290                      295                      300  
 Glu Val Leu Phe Leu Thr Arg His Phe Ile Phe His Asp Asn Asn Asn  
 305                      310                      315                      320  
 Thr Trp Glu Gly His Tyr Tyr His Tyr Ser Asp Pro Val Cys Lys His  
                     325                      330                      335  
 Pro Thr Phe Ser Ile Tyr Ala Arg Gly Arg Tyr Ser Arg Gly Val Leu  
                     340                      345                      350  
 Ser Ser Arg Val Met Gly Gly Thr Glu Phe Val Phe Lys Val Asn His  
                     355                      360                      365  
 Met Lys Val Thr Pro Met Asp Ala Ala Thr Ala Ser Leu Leu Asn Val  
                     370                      375                      380  
 Phe Asn Gly Asn Glu Cys Gly Ala Glu Gly Ser Trp Gln Val Gly Ile  
 385                      390                      395                      400  
 Gln Gln Asp Val Thr His Thr Asn Gly Cys Val Ala Leu Gly Ile Lys  
                     405                      410                      415  
 Leu Pro His Thr Glu Tyr Glu Ile Phe Lys Met Glu Gln Asp Ala Arg  
                     420                      425                      430  
 Gly Arg Tyr Leu Leu Phe Asn Gly Gln Arg Pro Ser Asp Gly Ser Ser  
                     435                      440                      445  
 Pro Asp Arg Pro Arg Arg Lys Lys Gly Xaa Lys Xaa Xaa Lys Xaa Ala  
                     450                      455                      460  
 Pro Pro  
 465

<210> 1217  
 <211> 514  
 <212> PRT  
 <213> Homo sapiens

<400> 1217

Met Ser Trp Pro Arg Arg Leu Leu Leu Arg Tyr Leu Phe Pro Ala Leu  
   1                    5                    10                    15  
 Leu Leu His Gly Leu Gly Glu Gly Ser Ala Leu Leu His Pro Asp Ser  
                     20                    25                    30  
 Arg Ser His Pro Arg Ser Leu Glu Lys Ser Ala Trp Arg Ala Phe Lys  
                     35                    40                    45  
 Glu Ser Gln Cys His His Met Leu Lys His Leu His Asn Gly Ala Arg  
   50                    55                    60  
 Ile Thr Val Gln Met Pro Pro Thr Ile Glu Gly His Trp Val Ser Thr  
   65                    70                    75                    80  
 Gly Cys Glu Val Arg Ser Gly Pro Glu Phe Ile Thr Arg Ser Tyr Arg  
                     85                    90                    95

Phe Tyr His Asn Asn Thr Phe Lys Ala Tyr Gln Phe Tyr Tyr Gly Ser  
 100 105 110  
 Asn Arg Cys Thr Asn Pro Thr Tyr Thr Leu Ile Ile Arg Gly Lys Ile  
 115 120 125  
 Arg Leu Arg Gln Ala Ser Trp Ile Ile Arg Gly Gly Thr Glu Ala Asp  
 130 135 140  
 Tyr Gln Leu His Asn Val Gln Val Ile Cys His Thr Glu Ala Val Ala  
 145 150 155 160  
 Glu Lys Leu Gly Gln Gln Val Asn Arg Thr Cys Pro Gly Phe Leu Ala  
 165 170 175  
 Asp Gly Gly Pro Trp Val Gln Asp Val Ala Tyr Asp Leu Trp Arg Glu  
 180 185 190  
 Glu Asn Gly Cys Glu Cys Thr Lys Ala Val Asn Phe Ala Met His Glu  
 195 200 205  
 Leu Gln Leu Ile Arg Val Glu Lys Gln Tyr Leu His His Asn Leu Asp  
 210 215 220  
 His Leu Val Glu Glu Leu Phe Leu Gly Asp Ile His Thr Asp Ala Thr  
 225 230 235 240  
 Gln Arg Met Phe Tyr Arg Pro Ser Ser Tyr Gln Pro Pro Leu Gln Asn  
 245 250 255  
 Ala Lys Asn His Asp His Ala Cys Ile Ala Cys Arg Ile Ile Tyr Arg  
 260 265 270  
 Ser Asp Glu His His Pro Pro Ile Leu Pro Pro Lys Ala Asp Leu Thr  
 275 280 285  
 Ile Gly Leu His Gly Glu Trp Val Ser Gln Arg Cys Glu Val Arg Pro  
 290 295 300  
 Glu Val Leu Phe Leu Thr Arg His Phe Ile Phe His Asp Asn Asn Asn  
 305 310 315 320  
 Thr Trp Glu Gly His Tyr Tyr His Tyr Ser Asp Pro Val Cys Lys His  
 325 330 335  
 Pro Thr Phe Ser Ile Tyr Ala Arg Gly Arg Tyr Ser Arg Gly Val Leu  
 340 345 350  
 Ser Ser Arg Val Met Gly Gly Thr Glu Phe Val Phe Lys Val Asn His  
 355 360 365  
 Met Lys Val Thr Pro Met Asp Ala Ala Thr Ala Ser Leu Leu Asn Val  
 370 375 380  
 Phe Asn Gly Asn Glu Cys Gly Ala Glu Gly Ser Trp Gln Val Gly Ile  
 385 390 395 400  
 Gln Gln Asp Val Thr His Thr Asn Gly Cys Val Ala Leu Gly Ile Lys  
 405 410 415

Leu Pro His Thr Glu Tyr Glu Ile Phe Lys Met Glu Gln Asp Ala Arg  
                     420                    425                    430  
 Gly Arg Tyr Leu Leu Phe Asn Gly Gln Arg Pro Ser Asp Gly Ser Ser  
                     435                    440                    445  
 Pro Asp Arg Pro Glu Lys Arg Ala Thr Ser Tyr Gln Met Pro Leu Val  
                     450                    455                    460  
 Gln Cys Ala Ser Ser Ser Pro Arg Ala Glu Asp Leu Ala Glu Asp Ser  
                     465                    470                    475                    480  
 Gly Ser Ser Leu Tyr Gly Arg Ala Pro Gly Arg His Thr Trp Ser Leu  
                     485                    490                    495  
 Leu Leu Ala Ala Leu Ala Cys Leu Val Pro Leu Leu His Trp Asn Ile  
                     500                    505                    510  
 Arg Arg

<210> 1218  
 <211> 36  
 <212> PRT  
 <213> Homo sapiens

<400> 1218  
 Met Asn Asn Ser Ile Ala Ala Gln Ala Ser Lys Phe Val Ile Leu Tyr  
     1                    5                    10                    15  
 Leu Phe Ile Leu Ser Phe Pro Lys Gln Cys Ile Cys His Ile Leu Ser  
                     20                    25                    30  
 Glu Met Val Trp  
                     35

<210> 1219  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

<400> 1219  
 Gln Ala Ser Lys Ser Leu Leu Pro His Gly Ile His Thr Ile Leu Asn  
     1                    5                    10                    15  
 Val Ile Tyr Ile Asn Leu Thr Ser Val Gly Ile Met Thr Met Cys Met  
                     20                    25                    30  
 Lys Cys Asn Leu Pro Lys Lys Phe Leu Arg Asp Ser Val Ser Lys Val  
                     35                    40                    45  
 Leu Ile Asp Ser Trp Ser His Arg Tyr Leu Leu Thr Ser Met Tyr Gln  
                     50                    55                    60  
 Tyr Ser Arg Leu Ser Glu Glu Lys Gln Val Ile Ser Ile Tyr Cys Ile

[illegible]

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<210> 1220
<211> 178
<212> PRT
<213> Homo sapiens
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<400> 1220
His Leu Leu Glu Val Thr Pro Cys Arg Leu Pro Val Pro Glu Phe Pro
 1          5          10          15
Gly Arg Thr Pro Arg Gly Ser Arg Thr Pro Asp Met Arg Arg Leu Leu
          20          25          30
Leu Val Thr Ser Leu Val Val Val Leu Leu Trp Glu Ala Gly Ala Val
          35          40          45
Pro Ala Pro Lys Val Pro Ile Lys Met Gln Val Lys His Trp Pro Ser
 50          55          60
Glu Gln Asp Pro Glu Lys Ala Trp Gly Ala Arg Val Val Glu Pro Pro
 65          70          75          80
Glu Lys Asp Asp Gln Leu Val Val Leu Phe Pro Val Gln Lys Pro Lys
          85          90          95
Leu Leu Thr Thr Glu Glu Lys Pro Arg Gly Gln Gly Arg Gly Pro Ile
          100          105          110
Leu Pro Gly Thr Lys Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg
          115          120          125
Val Leu Ser Pro Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro
          130          135          140
Glu Glu Asp Gln Gly Glu Glu Arg Pro Arg Leu Trp Val Met Pro Asn
          145          150          155          160
His Gln Val Leu Leu Gly Pro Glu Glu Asp Gln Asp His Ile Tyr His
          165          170          175
Pro Gln

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<210> 1221
<211> 40
<212> PRT
<213> Homo sapiens
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<400> 1221

Met Asn Asn Ser Ile Ala Ala Gln Ala Ser Lys Phe Val Ile Leu Tyr  
 1 5 10 15  
 Leu Phe Ile Leu Ser Phe Pro Lys Gln Cys Ile Cys His Ile Leu Val  
 20 25 30  
 Arg Trp Ser Gly Lys Ser His Phe  
 35 40

<210> 1222  
 <211> 39  
 <212> PRT  
 <213> Homo sapiens

<400> 1222  
 Met Met Gln Val Pro Asp Leu Glu Leu Gly Leu Leu Leu Ala Thr Phe  
 1 5 10 15  
 Leu Leu His Leu Leu Asp Ala Leu Pro Met Leu Leu Ser Leu Gln Ser  
 20 25 30  
 Cys Arg Glu Pro Thr Ser Ser  
 35

<210> 1223  
 <211> 54  
 <212> PRT  
 <213> Homo sapiens

<400> 1223  
 Gly Thr Leu Gln Arg Gly Phe Leu Leu Cys Ser Leu Val Pro Gly Trp  
 1 5 10 15  
 Gly Trp Gly Thr Pro Ala Ala Leu Thr Asp Gly Ser Pro Phe Ser Leu  
 20 25 30  
 Ser Gly His Pro Ser Pro Thr Leu Thr Cys Thr Lys Phe Ser Pro Gln  
 35 40 45  
 Leu Leu Cys Val Ala Pro  
 50

<210> 1224  
 <211> 39  
 <212> PRT  
 <213> Homo sapiens

<400> 1224  
 Met Met Gln Val Pro Asp Leu Glu Leu Gly Leu Leu Leu Ala Thr Phe  
 1 5 10 15  
 Leu Leu His Leu Leu Asp Ala Leu Pro Met Leu Leu Ser Leu Gln Ser  
 20 25 30

Cys Arg Glu Pro Thr Ser Ser  
35

<210> 1225

<211> 167

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (165)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1225

Met	Ser	Leu	Tyr	Leu	Cys	Val	Ser	Leu	Leu	Ile	Ser	Leu	Ser	Leu	Ser	1	5	10	15
Leu	Asn	Val	Ser	Val	Ser	Val	Ser	Leu	Arg	Leu	Cys	Leu	Tyr	Phe	Ser	20	25	30	
Pro	Pro	Leu	Ser	Asp	Ala	Ile	Ser	Leu	Cys	Leu	Ser	Leu	Ser	Leu	Ser	35	40	45	
Val	Ser	Pro	Phe	Leu	Ser	Pro	Ser	Leu	Ala	Leu	Cys	Phe	Leu	Cys	Leu	50	55	60	
Cys	Leu	Phe	Leu	Ala	Gln	Ser	Arg	Ala	Leu	Gly	Met	Arg	Thr	Arg	Val	65	70	75	80
Ser	Gln	Gly	Trp	Leu	Gln	Leu	Asp	Thr	Ser	Gly	Ile	Pro	Ala	Ser	Pro	85	90	95	
Gly	Pro	Ser	Lys	Gly	Glu	Arg	Tyr	Val	Thr	Phe	Gly	Val	Val	Gly	Gly	100	105	110	
Ala	Gly	Ser	Asn	Leu	Ala	Val	His	Ser	Ala	Arg	Pro	Leu	Ile	Gly	Asn	115	120	125	
Leu	Leu	Ser	Val	Gly	Pro	Thr	Ser	Thr	Leu	Thr	Pro	Thr	Arg	Gly	Leu	130	135	140	
Ser	Trp	Gln	Ser	Ile	Ala	Ala	Ser	Pro	Ser	Ser	Thr	Gly	His	Ala	Lys	145	150	155	160
Phe	Arg	Glu	Thr	Xaa	Lys	Asn										165			

<210> 1226

<211> 71

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (4)

<223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (60)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1226

Gln Leu Arg Xaa Leu Arg Asp Ser Ile Pro Glu Gln Phe Cys Asn Arg  
 1 5 10 15

Leu Lys Ala Pro Gly Asn Arg Thr His Ile Ser Gly Cys Leu Gly Gly  
 20 25 30

Gly Gln Asp Leu Gly Gly Pro Glu Arg Val Phe Trp Asp Asp Gly Ile  
 35 40 45

Phe Cys Ile Leu Thr Val Trp Cys Leu His Arg Xaa Gln His Leu Ser  
 50 55 60

Glu Ile Asn Gly Leu Ser Leu  
 65 70

&lt;210&gt; 1227

&lt;211&gt; 114

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1227

Met Ser Leu Tyr Leu Cys Val Ser Leu Leu Ile Ser Leu Ser Leu Ser  
 1 5 10 15

Leu Asn Val Ser Val Ser Val Ser Leu Arg Leu Cys Leu Tyr Phe Ser  
 20 25 30

Pro Pro Leu Ser Asp Ala Ile Ser Leu Cys Leu Ser Leu Ser Leu Ser  
 35 40 45

Val Ser Pro Phe Leu Ser Pro Ser Leu Ala Leu Cys Phe Leu Cys Leu  
 50 55 60

Cys Leu Phe Leu Ala Gln Ser Arg Ala Leu Gly Met Arg Thr Arg Val  
 65 70 75 80

Ser Gln Gly Trp Leu Gln Leu Asp Thr Ser Gly Ile Pro Ala Ser Pro  
 85 90 95

Gly Pro Ser Lys Gly Glu Arg Tyr Val Tyr Phe Arg Gly Gly Arg Gly  
 100 105 110

Cys Gly

&lt;210&gt; 1228

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens



&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (5)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1228

Met	Ala	Ala	Leu	Xaa	Thr	Val	Leu	Phe	Thr	Gly	Val	Arg	Arg	Leu	His
1				5					10					15	
Cys	Ser	Ala	Ala	Ala	Trp	Ala	Gly	Gly	Gln	Trp	Arg	Leu	Gln	Gln	Gly
		20					25						30		
Leu	Ala	Ala	Asn	Pro	Ser	Gly	Tyr	Gly	Pro	Leu	Thr	Glu	Leu	Pro	Asp
		35					40					45			
Trp	Ser	Tyr	Ala	Asp	Gly	Arg	Pro	Ala	Pro	Pro	Met	Lys	Gly	Gln	Leu
	50					55					60				
Arg	Arg	Lys	Ala	Glu	Arg	Glu	Thr	Phe	Ala	Arg	Arg	Val	Val	Leu	Leu
65					70					75					80
Ser	Gln	Glu	Met	Asp	Ala	Gly	Leu	Gln	Ala	Trp	Gln	Leu	Arg	Gln	Gln
				85					90					95	
Lys	Leu	Gln	Glu	Glu	Gln	Arg	Lys	Gln	Glu	Asn	Ala	Leu	Lys	Pro	Lys
		100						105					110		
Gly	Ala	Ser	Leu	Lys	Ser	Pro	Leu	Pro	Ser	Gln					
		115					120								

&lt;210&gt; 1229

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1229

Met	Ala	Ala	Leu	Val	Thr	Val	Leu	Phe	Thr	Gly	Val	Arg	Arg	Leu	His
1				5					10					15	
Cys	Ser	Ala	Ala	Ala	Trp	Ala	Gly	Gly	Gln	Trp	Arg	Leu	Gln	Gln	Gly
		20					25						30		
Leu	Ala	Ala	Asn	Pro	Ser	Gly	Tyr	Gly	Pro	Leu	Thr	Glu	Leu	Pro	Asp
		35					40					45			
Trp	Ser	Tyr	Ala	Asp	Gly	Arg	Pro	Ala	Pro	Pro	Met	Lys	Gly	Gln	Leu
	50					55					60				
Arg	Arg	Lys	Ala	Glu	Arg	Glu	Thr	Phe	Ala	Arg	Arg	Val	Val	Leu	Leu
65					70					75					80
Ser	Gln	Glu	Met	Asp	Ala	Gly	Leu	Gln	Ala	Trp	Gln	Leu	Arg	Gln	Gln
				85					90					95	
Lys	Leu	Gln	Glu	Glu	Gln	Arg	Lys	Gln	Glu	Asn	Ala	Leu	Lys	Pro	Lys
		100						105					110		

Gly Ala Ser Leu Lys Ser Pro Leu Pro Ser Gln  
 115 120

<210> 1230  
 <211> 128  
 <212> PRT  
 <213> Homo sapiens

<400> 1230  
 Met Gly Ser Ala Pro Trp Ala Pro Val Leu Leu Leu Ala Leu Gly Leu  
 1 5 10 15  
 Arg Gly Leu Gln Ala Gly Ala Arg Arg Ala Pro Asp Pro Gly Phe Gln  
 20 25 30  
 Glu Arg Phe Phe Gln Gln Arg Leu Asp His Phe Asn Phe Glu Arg Phe  
 35 40 45  
 Gly Asn Lys Thr Phe Pro Gln Arg Phe Leu Val Ser Asp Arg Phe Trp  
 50 55 60  
 Val Arg Gly Glu Gly Pro Ile Phe Phe Tyr Thr Gly Asn Glu Gly Asp  
 65 70 75 80  
 Val Trp Ala Phe Ala Asn Asn Ser Ala Phe Val Ala Glu Leu Ala Ala  
 85 90 95  
 Glu Arg Gly Ala Leu Leu Val Phe Ala Glu His Arg Tyr Tyr Gly Lys  
 100 105 110  
 Ser Leu Pro Phe Gly Ala Gln Ser Thr Gln Arg Gly Thr Arg Ser Cys  
 115 120 125

<210> 1231  
 <211> 492  
 <212> PRT  
 <213> Homo sapiens

<400> 1231  
 Met Gly Ser Ala Pro Trp Ala Pro Val Leu Leu Leu Ala Leu Gly Leu  
 1 5 10 15  
 Arg Gly Leu Gln Ala Gly Ala Arg Arg Ala Pro Asp Pro Gly Phe Gln  
 20 25 30  
 Glu Arg Phe Phe Gln Gln Arg Leu Asp His Phe Asn Phe Glu Arg Phe  
 35 40 45  
 Gly Asn Lys Thr Phe Pro Gln Arg Phe Leu Val Ser Asp Arg Phe Trp  
 50 55 60  
 Val Arg Gly Glu Gly Pro Ile Phe Phe Tyr Thr Gly Asn Glu Gly Asp  
 65 70 75 80

Val	Trp	Ala	Phe	Ala	Asn	Asn	Ser	Ala	Phe	Val	Ala	Glu	Leu	Ala	Ala
				85					90					95	
Glu	Arg	Gly	Ala	Leu	Leu	Val	Phe	Ala	Glu	His	Arg	Tyr	Tyr	Gly	Lys
			100					105					110		
Ser	Leu	Pro	Phe	Gly	Ala	Gln	Ser	Thr	Gln	Arg	Gly	His	Thr	Glu	Leu
		115					120					125			
Leu	Thr	Val	Glu	Gln	Ala	Leu	Ala	Asp	Phe	Ala	Glu	Leu	Leu	Arg	Ala
	130					135					140				
Leu	Arg	Arg	Asp	Leu	Gly	Ala	Gln	Asp	Ala	Pro	Ala	Ile	Ala	Phe	Gly
145					150					155					160
Gly	Ser	Tyr	Gly	Gly	Met	Leu	Ser	Ala	Tyr	Leu	Arg	Met	Lys	Tyr	Pro
				165					170					175	
His	Leu	Val	Ala	Gly	Ala	Leu	Ala	Ala	Ser	Ala	Pro	Val	Leu	Ala	Val
			180					185					190		
Ala	Gly	Leu	Gly	Asp	Ser	Asn	Gln	Phe	Phe	Arg	Asp	Val	Thr	Ala	Asp
		195					200					205			
Phe	Glu	Gly	Gln	Ser	Pro	Lys	Cys	Thr	Gln	Gly	Val	Arg	Glu	Ala	Phe
	210					215					220				
Arg	Gln	Ile	Lys	Asp	Leu	Phe	Leu	Gln	Gly	Ala	Tyr	Asp	Thr	Val	Arg
225					230					235					240
Trp	Glu	Phe	Gly	Thr	Cys	Gln	Pro	Leu	Ser	Asp	Glu	Lys	Asp	Leu	Thr
				245					250					255	
Gln	Leu	Phe	Met	Phe	Ala	Arg	Asn	Ala	Phe	Thr	Val	Leu	Ala	Met	Met
			260					265					270		
Asp	Tyr	Pro	Tyr	Pro	Thr	Asp	Phe	Leu	Gly	Pro	Leu	Pro	Ala	Asn	Pro
		275					280					285			
Val	Lys	Val	Gly	Cys	Asp	Arg	Leu	Leu	Ser	Glu	Ala	Gln	Arg	Ile	Thr
	290					295					300				
Gly	Leu	Arg	Ala	Leu	Ala	Gly	Leu	Val	Tyr	Asn	Ala	Ser	Gly	Ser	Glu
305					310					315					320
His	Cys	Tyr	Asp	Ile	Tyr	Arg	Leu	Tyr	His	Ser	Cys	Ala	Asp	Pro	Thr
				325					330					335	
Gly	Cys	Gly	Thr	Gly	Pro	Asp	Ala	Arg	Ala	Trp	Asp	Tyr	Gln	Ala	Cys
			340				345						350		
Thr	Glu	Ile	Asn	Leu	Thr	Phe	Ala	Ser	Asn	Asn	Val	Thr	Asp	Met	Phe
		355					360					365			
Pro	Asp	Leu	Pro	Phe	Thr	Asp	Glu	Leu	Arg	Gln	Arg	Tyr	Cys	Leu	Asp
	370					375					380				
Thr	Trp	Gly	Val	Trp	Pro	Arg	Pro	Asp	Trp	Leu	Leu	Thr	Ser	Phe	Trp
385					390					395					400

Gly Gly Asp Leu Arg Ala Ala Ser Asn Ile Ile Phe Ser Asn Gly Asn  
 405 410 415

Leu Asp Pro Trp Ala Gly Gly Gly Ile Arg Arg Asn Leu Ser Ala Ser  
 420 425 430

Val Ile Ala Val Thr Ile Gln Gly Gly Ala His His Leu Asp Leu Arg  
 435 440 445

Ala Ser His Pro Glu Asp Pro Ala Ser Val Val Glu Ala Arg Lys Leu  
 450 455 460

Glu Ala Thr Ile Ile Gly Glu Trp Val Lys Ala Ala Arg Arg Glu Gln  
 465 470 475 480

Gln Pro Ala Leu Arg Gly Gly Pro Arg Leu Ser Leu  
 485 490

&lt;210&gt; 1232

&lt;211&gt; 492

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (89)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1232

Met Gly Ser Ala Pro Trp Ala Pro Val Leu Leu Ala Leu Gly Leu  
 1 5 10 15

Arg Gly Leu Gln Ala Gly Ala Arg Arg Ala Pro Asp Pro Gly Phe Gln  
 20 25 30

Glu Arg Phe Phe Gln Gln Arg Leu Asp His Phe Asn Phe Glu Arg Phe  
 35 40 45

Gly Asn Lys Thr Phe Pro Gln Arg Phe Leu Val Ser Asp Arg Phe Trp  
 50 55 60

Val Arg Gly Glu Gly Pro Ile Phe Phe Tyr Thr Gly Asn Glu Gly Asp  
 65 70 75 80

Val Trp Ala Phe Ala Asn Asn Ser Xaa Phe Val Ala Glu Leu Ala Ala  
 85 90 95

Glu Arg Gly Ala Leu Leu Val Phe Ala Glu His Arg Tyr Tyr Gly Lys  
 100 105 110

Ser Leu Pro Phe Gly Ala Gln Ser Thr Gln Arg Gly His Thr Glu Leu  
 115 120 125

Leu Thr Val Glu Gln Ala Leu Ala Asp Phe Ala Glu Leu Leu Arg Ala  
 130 135 140

Leu Arg Arg Asp Leu Gly Ala Gln Asp Ala Pro Ala Ile Ala Phe Gly

145		150		155		160
Gly Ser Tyr Gly Gly Met Leu Ser Ala Tyr Leu Arg Met Lys Tyr Pro						
		165		170		175
His Leu Val Ala Gly Ala Leu Ala Ala Ser Ala Pro Val Leu Ala Val						
		180		185		190
Ala Gly Leu Gly Asp Ser Asn Gln Phe Phe Arg Asp Val Thr Ala Asp						
		195		200		205
Phe Glu Gly Gln Ser Pro Lys Cys Thr Gln Gly Val Arg Glu Ala Phe						
		210		215		220
Arg Gln Ile Lys Asp Leu Phe Leu Gln Gly Ala Tyr Asp Thr Val Arg						
		225		230		235
Trp Glu Phe Gly Thr Cys Gln Pro Leu Ser Asp Glu Lys Asp Leu Thr						
		245		250		255
Gln Leu Phe Met Phe Ala Arg Asn Ala Phe Thr Val Leu Ala Met Met						
		260		265		270
Asp Tyr Pro Tyr Pro Thr Asp Phe Leu Gly Pro Leu Pro Ala Asn Pro						
		275		280		285
Val Lys Val Gly Cys Asp Arg Leu Leu Ser Glu Ala Gln Arg Ile Thr						
		290		295		300
Gly Leu Arg Ala Leu Ala Gly Leu Val Tyr Asn Ala Ser Gly Ser Glu						
		305		310		315
His Cys Tyr Asp Ile Tyr Arg Leu Tyr His Ser Cys Ala Asp Pro Thr						
		325		330		335
Gly Cys Gly Thr Gly Pro Asp Ala Arg Ala Trp Asp Tyr Gln Ala Cys						
		340		345		350
Thr Glu Ile Asn Leu Thr Phe Ala Ser Asn Asn Val Thr Asp Met Phe						
		355		360		365
Pro Asp Leu Pro Phe Thr Asp Glu Leu Arg Gln Arg Tyr Cys Leu Asp						
		370		375		380
Thr Trp Gly Val Trp Pro Arg Pro Asp Trp Leu Leu Thr Ser Phe Trp						
		385		390		395
Gly Gly Asp Leu Arg Ala Ala Ser Asn Ile Ile Phe Ser Asn Gly Asn						
		405		410		415
Leu Asp Pro Trp Ala Gly Gly Gly Ile Arg Arg Asn Leu Ser Ala Ser						
		420		425		430
Val Ile Ala Val Thr Ile Gln Gly Gly Ala His His Leu Asp Leu Arg						
		435		440		445
Ala Ser His Pro Glu Asp Pro Ala Ser Val Val Glu Ala Arg Lys Leu						
		450		455		460
Glu Ala Thr Ile Ile Gly Glu Trp Val Lys Ala Ala Arg Arg Glu Gln						

465

470

475

480

Gln Pro Ala Leu Arg Gly Gly Pro Arg Leu Ser Leu  
 485 490

&lt;210&gt; 1233

&lt;211&gt; 184

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1233

Met Phe Leu Glu Leu Ser Gln Ala Leu Leu Leu Leu Gly Leu Pro Arg  
 1 5 10 15

Ala Pro Thr Leu Phe Pro Ala Leu Pro Glu Gly Pro Thr Ser Leu Gly  
 20 25 30

Glu Gln Trp Pro Pro Gln Leu Pro Pro His Leu Gly Ala Pro Pro Ala  
 35 40 45

Ala Glu Gly Ala Val Ala Met Val Gly Cys Gly Glu Gly Arg Gly Gly  
 50 55 60

Lys Pro Leu Cys Cys Ser Pro Ala Gln Ser Pro Ala Gln Arg Val Arg  
 65 70 75 80

Ser Gly Gly Asp Lys Glu Pro Ile Thr Thr Thr Glu Val Ser Leu Ile  
 85 90 95

Leu Leu His Ser Arg Cys Phe Asn Leu Thr Lys Leu Lys Lys Thr Ala  
 100 105 110

Phe Ala Met Ala His Arg Ser Leu Tyr Leu Phe Leu Arg Lys Cys Phe  
 115 120 125

Leu Leu Phe Ala Gly Gln Val Pro Lys Asn Arg Gln Met Phe Leu Leu  
 130 135 140

Lys Asp Gln Pro Ile Arg Leu Val Arg Thr Arg Arg Leu Trp Pro Arg  
 145 150 155 160

Ala Ser Pro Leu Gln Ala Cys Gly Leu Arg Trp His Leu Ala Ala Gly  
 165 170 175

Pro Gln Pro Gly Glu Gly Tyr Tyr  
 180

&lt;210&gt; 1234

&lt;211&gt; 130

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1234

Met Phe Leu Glu Leu Ser Gln Ala Leu Leu Leu Leu Gly Leu Pro Arg  
 1 5 10 15

Ala Pro Thr Leu Phe Pro Ala Leu Pro Glu Gly Pro Thr Ser Leu Gly  
                   20                                  25                                  30

Glu Gln Trp Pro Pro Gln Leu Pro Pro His Leu Gly Ala Pro Pro Ala  
                   35                                  40                                  45

Ala Glu Gly Ala Val Ala Met Val Gly Cys Gly Glu Gly Arg Gly Gly  
                   50                                  55                                  60

Lys Pro Leu Cys Cys Ser Pro Ala Gln Ser Pro Ala Gln Arg Val Arg  
                   65                                  70                                  75                                  80

Ser Gly Gly Asp Lys Glu Pro Ile Thr Thr Thr Glu Val Ser Leu Ile  
                                   85                                  90                                  95

Leu Leu His Ser Arg Cys Phe Asn Leu Thr Lys Leu Lys Lys Thr Ala  
                   100                                  105                                  110

Phe Ala Met Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
                   115                                  120                                  125

Lys Lys  
                   130

&lt;210&gt; 1235

&lt;211&gt; 133

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1235

Met Phe Leu Glu Leu Ser Gln Ala Leu Leu Leu Leu Gly Leu Pro Arg  
   1                                  5                                  10                                  15

Ala Pro Thr Leu Phe Pro Ala Leu Pro Glu Gly Pro Thr Ser Leu Gly  
                   20                                  25                                  30

Glu Gln Trp Pro Pro Gln Leu Pro Pro His Leu Gly Ala Pro Pro Ala  
                   35                                  40                                  45

Ala Glu Gly Ala Val Ala Met Val Gly Cys Gly Glu Gly Arg Gly Gly  
                   50                                  55                                  60

Lys Pro Leu Cys Cys Ser Pro Ala Gln Ser Pro Ala Gln Arg Val Arg  
                   65                                  70                                  75                                  80

Ser Gly Gly Asp Lys Glu Pro Ile Thr Thr Thr Glu Val Ser Leu Ile  
                                   85                                  90                                  95

Leu Leu His Ser Arg Cys Phe Asn Leu Thr Lys Leu Lys Lys Thr Ala  
                   100                                  105                                  110

Phe Ala Met Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
                   115                                  120                                  125

Lys Lys Lys Lys Lys  
                   130

&lt;210&gt; 1236

&lt;211&gt; 399

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1236

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Met Gly Ile Leu Leu Gly Leu Leu Leu Leu Gly His Leu Thr Val Asp
  1           5           10           15

Thr Tyr Gly Arg Pro Ile Leu Glu Val Pro Glu Ser Val Thr Gly Pro
          20           25           30

Trp Lys Gly Asp Val Asn Leu Pro Cys Thr Tyr Asp Pro Leu Gln Gly
          35           40           45

Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg Gly Ser Asp Pro
          50           55           60

Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp His Ile Gln Gln Ala
          65           70           75           80

Lys Tyr Gln Gly Arg Leu His Val Ser His Lys Val Pro Gly Asp Val
          85           90           95

Ser Leu Gln Leu Ser Thr Leu Glu Met Asp Asp Arg Ser His Tyr Thr
          100          105          110

Cys Glu Val Thr Trp Gln Thr Pro Asp Gly Asn Gln Val Val Arg Asp
          115          120          125

Lys Ile Thr Glu Leu Arg Val Gln Lys Leu Ser Val Ser Lys Pro Thr
          130          135          140

Val Thr Thr Gly Ser Gly Tyr Gly Phe Thr Val Pro Gln Gly Met Arg
          145          150          155          160

Ile Ser Leu Gln Cys Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile
          165          170

Trp Tyr Lys Gln Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr
          180          185          190

Leu Ser Thr Leu Leu Phe Lys Pro Ala Val Ile Ala Asp Ser Gly Ser
          195          200          205

Tyr Phe Cys Thr Ala Lys Gly Gln Val Gly Ser Glu Gln His Ser Asp
          210          215          220

Ile Val Lys Phe Val Val Lys Asp Ser Ser Lys Leu Leu Lys Thr Lys
          225          230          235          240

Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser Thr
          245          250          255

Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr Leu Gly
          260          265          270

Glu Thr Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe Ala Ile Ile
          275          280          285

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Leu Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr Met Ala Tyr Ile  
 290 295 300  
 Met Leu Cys Arg Lys Thr Ser Gln Gln Glu His Val Tyr Glu Ala Ala  
 305 310 315 320  
 Arg Ala His Ala Arg Glu Ala Asn Asp Ser Gly Glu Thr Met Arg Val  
 325 330 335  
 Ala Ile Phe Ala Ser Gly Cys Ser Ser Asp Glu Pro Thr Ser Gln Asn  
 340 345 350  
 Leu Gly Asn Asn Tyr Ser Asp Glu Pro Cys Ile Gly Gln Glu Tyr Gln  
 355 360 365  
 Ile Ile Ala Gln Ile Asn Gly Asn Tyr Ala Arg Leu Leu Asp Thr Val  
 370 375 380  
 Pro Leu Asp Tyr Glu Phe Leu Ala Thr Glu Gly Lys Ser Val Cys  
 385 390 395

&lt;210&gt; 1237

&lt;211&gt; 399

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1237

Met Gly Ile Leu Leu Gly Leu Leu Leu Leu Gly His Leu Thr Val Asp  
 1 5 10 15  
 Thr Tyr Gly Arg Pro Ile Leu Glu Val Pro Glu Ser Val Thr Gly Pro  
 20 25 30  
 Trp Lys Gly Asp Val Asn Leu Pro Cys Thr Tyr Asp Pro Leu Gln Gly  
 35 40 45  
 Tyr Thr Gln Val Leu Val Lys Trp Leu Val Gln Arg Gly Ser Asp Pro  
 50 55 60  
 Val Thr Ile Phe Leu Arg Asp Ser Ser Gly Asp His Ile Gln Gln Ala  
 65 70 75 80  
 Lys Tyr Gln Gly Arg Leu His Val Ser His Lys Val Pro Gly Asp Val  
 85 90 95  
 Ser Leu Gln Leu Ser Thr Leu Glu Met Asp Asp Arg Ser His Tyr Thr  
 100 105 110  
 Cys Glu Val Thr Trp Gln Thr Pro Asp Gly Asn Gln Val Val Arg Asp  
 115 120 125  
 Lys Ile Thr Glu Leu Arg Val Gln Lys Leu Ser Val Ser Lys Pro Thr  
 130 135 140  
 Val Thr Thr Gly Ser Gly Tyr Gly Phe Thr Val Pro Gln Gly Met Arg  
 145 150 155 160

Ile Ser Leu Gln Cys Gln Ala Arg Gly Ser Pro Pro Ile Ser Tyr Ile  
 165 170 175  
 Trp Tyr Lys Gln Gln Thr Asn Asn Gln Glu Pro Ile Lys Val Ala Thr  
 180 185 190  
 Leu Ser Thr Leu Leu Phe Lys Pro Ala Val Ile Ala Asp Ser Gly Ser  
 195 200 205  
 Tyr Phe Cys Thr Ala Lys Gly Gln Val Gly Ser Glu Gln His Ser Asp  
 210 215 220  
 Ile Val Lys Phe Val Val Lys Asp Ser Ser Lys Leu Leu Lys Thr Lys  
 225 230 235 240  
 Thr Glu Ala Pro Thr Thr Met Thr Tyr Pro Leu Lys Ala Thr Ser Thr  
 245 250 255  
 Val Lys Gln Ser Trp Asp Trp Thr Thr Asp Met Asp Gly Tyr Leu Gly  
 260 265 270  
 Glu Thr Ser Ala Gly Pro Gly Lys Ser Leu Pro Val Phe Ala Ile Ile  
 275 280 285  
 Leu Ile Ile Ser Leu Cys Cys Met Val Val Phe Thr Met Ala Tyr Ile  
 290 295 300  
 Met Leu Cys Arg Lys Thr Ser Gln Gln Glu His Val Tyr Glu Ala Ala  
 305 310 315 320  
 Arg Ala His Ala Arg Glu Ala Asn Asp Ser Gly Glu Thr Met Arg Val  
 325 330 335  
 Ala Ile Phe Ala Ser Gly Cys Ser Ser Asp Glu Pro Thr Ser Gln Asn  
 340 345 350  
 Leu Gly Asn Asn Tyr Ser Asp Glu Pro Cys Ile Gly Gln Glu Tyr Gln  
 355 360 365  
 Ile Ile Ala Gln Ile Asn Gly Asn Tyr Ala Arg Leu Leu Asp Thr Val  
 370 375 380  
 Pro Leu Asp Tyr Glu Phe Leu Ala Thr Glu Gly Lys Ser Val Cys  
 385 390 395

&lt;210&gt; 1238

&lt;211&gt; 209

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (15)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (18)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (128)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (147)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (152)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1238

Met	Ala	Lys	Phe	Arg	Arg	Arg	Thr	Cys	Ile	Ile	Leu	Ala	Leu	Xaa	Ile
1				5					10					15	

Leu	Xaa	Ile	Phe	Ser	Leu	Met	Met	Gly	Leu	Lys	Met	Leu	Arg	Pro	Asn
			20					25					30		

Thr	Ala	Thr	Phe	Gly	Ala	Pro	Phe	Gly	Leu	Asp	Leu	Leu	Pro	Glu	Leu
		35					40					45			

His	Gln	Arg	Thr	Ile	His	Leu	Gly	Lys	Asn	Phe	Asp	Phe	Gln	Lys	Ser
	50					55					60				

Asp	Arg	Ile	Asn	Ser	Glu	Thr	Asn	Thr	Lys	Asn	Leu	Lys	Ser	Val	Glu
65					70					75					80

Ile	Thr	Met	Lys	Pro	Ser	Lys	Ala	Ser	Glu	Leu	Asn	Leu	Asp	Glu	Leu
				85						90				95	

Pro	Pro	Leu	Asn	Asn	Tyr	Leu	His	Val	Phe	Tyr	Tyr	Ser	Trp	Tyr	Gly
			100					105					110		

Asn	Pro	Gln	Phe	Asp	Gly	Lys	Tyr	Ile	His	Trp	Asn	His	Pro	Val	Xaa
		115					120					125			

Glu	His	Trp	Asp	Pro	Arg	Ile	Ala	Lys	Asn	Tyr	Pro	Gln	Gly	Arg	His
130						135					140				

Asn	Pro	Xaa	Asp	Asp	Ile	Gly	Xaa	Ser	Phe	Tyr	Pro	Glu	Leu	Gly	Ser
145					150					155					160

Tyr	Ser	Ser	Arg	Asp	Pro	Ser	Val	Ile	Glu	Thr	His	Met	Arg	Gln	Met
			165						170					175	

Arg	Ser	Ala	Ser	Ile	Gly	Asn	Tyr	Cys	Ile	Tyr	Ile	Tyr	Met	Cys	Val
			180					185					190		

Phe	Val	Ser	Val	Tyr	Met	His	Ile	Asn	Asp	Phe	Leu	Cys	Asn	Phe	Asn
		195					200					205			

Ser

<210> 1239  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<400> 1239

Tyr Phe Asp Ile Ser Lys His Leu His Gly Asn His Tyr Ile Asp Pro  
 1 5 10 15  
 Thr Cys Gly Phe Ser Ser Tyr Val His Leu Thr Arg Ile Tyr Tyr Phe  
 20 25 30  
 Arg Tyr Asn Leu Gln Met Ser His Leu Ile Ile Phe Tyr Asn Ile Pro  
 35 40 45  
 Tyr Phe Ile Lys Val Leu Leu Glu Lys Tyr Leu Pro Gln Arg Ser Phe  
 50 55 60  
 Cys His Cys Val Arg Cys Val Phe Glu Pro Thr Met Thr Glu Ser Lys  
 65 70 75 80  
 Phe

<210> 1240  
 <211> 133  
 <212> PRT  
 <213> Homo sapiens

<400> 1240

Met Ala Lys Phe Arg Arg Arg Thr Cys Ile Ile Leu Ala Leu Phe Ile  
 1 5 10 15  
 Leu Phe Ile Phe Ser Leu Met Met Gly Leu Lys Met Leu Arg Pro Asn  
 20 25 30  
 Thr Ala Thr Phe Gly Ala Pro Phe Gly Leu Asp Leu Leu Pro Glu Leu  
 35 40 45  
 His Gln Arg Thr Ile His Leu Gly Lys Asn Phe Asp Phe Gln Lys Ser  
 50 55 60  
 Asp Arg Ile Asn Ser Glu Thr Asn Thr Lys Asn Leu Lys Ser Val Glu  
 65 70 75 80  
 Ile Thr Met Lys Pro Ser Lys Ala Ser Glu Leu Asn Leu Asp Glu Leu  
 85 90 95  
 Pro Pro Leu Asn Asn Tyr Leu His Val Phe Tyr Tyr Ser Trp Tyr Gly  
 100 105 110  
 Asn Pro Gln Phe Asp Gly Lys Tyr Ile His Trp Asn His Pro Val Leu  
 115 120 125  
 Glu His Trp Asp Pro  
 130

<210> 1241  
 <211> 886  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (26)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (216)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (234)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (275)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (871)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1241  
 Met Ala Ala Arg Gly Arg Gly Leu Leu Leu Leu Thr Leu Ser Val Leu  
     1                    5                    10                    15  
 Leu Ala Ala Gly Pro Ser Ala Ala Ala Xaa Lys Leu Asn Ile Pro Lys  
                     20                    25                    30  
 Val Leu Leu Pro Phe Thr Arg Ala Thr Arg Val Asn Phe Thr Leu Glu  
                     35                    40                    45  
 Ala Ser Glu Gly Cys Tyr Arg Trp Leu Ser Thr Arg Pro Glu Val Ala  
                     50                    55                    60  
 Ser Ile Glu Pro Leu Gly Leu Asp Glu Gln Gln Cys Ser Gln Lys Ala  
                     65                    70                    75                    80  
 Val Val Gln Ala Arg Leu Thr Gln Pro Ala Arg Leu Thr Ser Ile Ile  
                     85                    90                    95  
 Phe Ala Glu Asp Ile Thr Thr Gly Gln Val Leu Arg Cys Asp Ala Ile  
                     100                    105                    110  
 Val Asp Leu Ile His Asp Ile Gln Ile Val Ser Thr Thr Arg Glu Leu  
                     115                    120                    125  
 Tyr Leu Glu Asp Ser Pro Leu Glu Leu Lys Ile Gln Ala Leu Asp Ser  
                     130                    135                    140

Glu Gly Asn Thr Phe Ser Thr Leu Ala Gly Leu Val Phe Glu Trp Thr  
 145 150 155 160  
 Ile Val Lys Asp Ser Glu Ala Asp Arg Phe Ser Asp Ser His Asn Ala  
 165 170 175  
 Leu Arg Ile Leu Thr Phe Leu Glu Ser Thr Tyr Ile Pro Pro Ser Tyr  
 180 185 190  
 Ile Ser Glu Met Glu Lys Ala Ala Lys Gln Gly Asp Thr Ile Leu Val  
 195 200 205  
 Ser Gly Met Lys Thr Gly Ser Xaa Lys Leu Lys Ala Arg Ile Gln Glu  
 210 215 220  
 Ala Val Tyr Lys Asn Val Arg Pro Ala Xaa Val Arg Leu Leu Ile Leu  
 225 230 235 240  
 Glu Asn Ile Leu Leu Asn Pro Ala Tyr Asp Val Tyr Leu Met Val Gly  
 245 250 255  
 Thr Ser Ile His Tyr Lys Val Gln Lys Ile Arg Gln Gly Lys Ile Thr  
 260 265 270  
 Glu Leu Xaa Met Pro Ser Asp Gln Tyr Glu Leu Gln Leu Gln Asn Ser  
 275 280 285  
 Ile Pro Gly Pro Glu Gly Asp Pro Thr Arg Pro Val Ala Val Leu Ala  
 290 295 300  
 Gln Asp Thr Ser Met Val Thr Ala Leu Gln Leu Gly Gln Ser Ser Leu  
 305 310 315 320  
 Val Leu Gly His Arg Ser Ile Arg Met Gln Gly Ala Ser Arg Leu Pro  
 325 330 335  
 Asn Ser Thr Ile Tyr Val Val Glu Pro Gly Tyr Leu Gly Phe Thr Val  
 340 345 350  
 His Pro Gly Asp Arg Trp Val Leu Glu Thr Gly Arg Leu Tyr Glu Ile  
 355 360 365  
 Thr Ile Glu Val Phe Asp Lys Phe Ser Asn Lys Val Tyr Val Ser Asp  
 370 375 380  
 Asn Ile Arg Ile Glu Thr Val Leu Pro Ala Glu Phe Phe Glu Val Leu  
 385 390 395 400  
 Ser Ser Ser Gln Asn Gly Ser Tyr His Arg Ile Arg Ala Leu Lys Arg  
 405 410 415  
 Gly Gln Thr Ala Ile Asp Ala Ala Leu Thr Ser Val Val Asp Gln Asp  
 420 425 430  
 Gly Gly Val His Ile Leu Gln Val Pro Val Trp Asn Gln Gln Glu Val  
 435 440 445  
 Glu Ile His Ile Pro Ile Thr Leu Tyr Pro Ser Ile Leu Thr Phe Pro  
 450 455 460

Trp Gln Pro Lys Thr Gly Ala Tyr Gln Tyr Thr Ile Arg Ala His Gly  
 465 470 475 480  
 Gly Ser Gly Asn Phe Ser Trp Ser Ser Ser Ser His Leu Val Ala Thr  
 485 490 495  
 Val Thr Val Lys Gly Val Met Thr Thr Gly Ser Asp Ile Gly Phe Ser  
 500 505 510  
 Val Ile Gln Ala His Asp Val Gln Asn Pro Leu His Phe Gly Glu Met  
 515 520 525  
 Lys Val Tyr Val Ile Glu Pro His Ser Met Glu Phe Ala Pro Cys Gln  
 530 535 540  
 Val Glu Ala Arg Val Gly Gln Ala Leu Glu Leu Pro Leu Arg Ile Ser  
 545 550 555 560  
 Gly Leu Met Pro Gly Gly Ala Ser Glu Val Val Thr Leu Ser Asp Cys  
 565 570 575  
 Ser His Phe Asp Leu Ala Val Glu Val Glu Asn Gln Gly Val Phe Gln  
 580 585 590  
 Pro Leu Pro Gly Arg Leu Pro Pro Gly Ser Glu His Cys Ser Gly Val  
 595 600 605  
 Arg Val Lys Ala Glu Ala Gln Gly Ser Thr Thr Leu Leu Val Ser Tyr  
 610 615 620  
 Arg His Gly His Val His Leu Ser Ala Lys Ile Thr Ile Ala Ala Tyr  
 625 630 635 640  
 Leu Pro Leu Lys Ala Val Asp Pro Ser Ser Val Ala Leu Val Thr Leu  
 645 650 655  
 Gly Ser Ser Lys Glu Met Leu Phe Glu Gly Gly Pro Arg Pro Trp Ile  
 660 665 670  
 Leu Glu Pro Ser Lys Phe Phe Gln Asn Val Thr Ala Glu Asp Thr Asp  
 675 680 685  
 Ser Ile Gly Leu Ala Leu Phe Ala Pro His Ser Ser Arg Asn Tyr Gln  
 690 695 700  
 Gln His Trp Ile Leu Val Thr Cys Gln Ala Leu Gly Glu Gln Val Ile  
 705 710 715 720  
 Ala Leu Ser Val Gly Asn Lys Pro Ser Leu Thr Asn Pro Phe Pro Ala  
 725 730 735  
 Val Glu Pro Ala Val Val Lys Phe Val Cys Ala Pro Pro Ser Arg Leu  
 740 745 750  
 Thr Leu Val Pro Val Tyr Thr Ser Pro Gln Leu Asp Met Ser Cys Pro  
 755 760 765  
 Leu Leu Gln Gln Asn Lys Gln Val Val Pro Val Ser Ser His Arg Asn  
 770 775 780

Pro Leu Leu Asp Leu Ala Ala Tyr Asp Gln Glu Gly Arg Arg Phe Asp  
 785 790 795 800

Asn Phe Ser Ser Leu Ser Ile Gln Trp Glu Ser Thr Arg Pro Val Leu  
 805 810 815

Ala Ser Ile Glu Pro Glu Leu Pro Met Gln Leu Val Ser Gln Asp Asp  
 820 825 830

Glu Ser Gly Gln Lys Lys Leu His Gly Leu Gln Ala Ile Leu Val His  
 835 840 845

Glu Ala Ser Gly Thr Thr Ala Ser Leu Pro Leu Pro Leu Ala Thr Arg  
 850 855 860

Ser Pro Thr Ser Ala Leu Xaa Glu Gln Ser Ser Arg Met Thr Leu Trp  
 865 870 875 880

Cys Leu Cys Arg Pro Pro  
 885

<210> 1242  
 <211> 831  
 <212> PRT  
 <213> Homo sapiens

<400> 1242  
 Met Ala Ala Arg Gly Arg Gly Leu Leu Leu Leu Thr Leu Ser Val Leu  
 1 5 10 15

Leu Ala Ala Gly Pro Ser Ala Ala Ala Lys Leu Asn Ile Pro Lys  
 20 25 30

Val Leu Leu Pro Phe Thr Arg Ala Thr Arg Val Asn Phe Thr Leu Glu  
 35 40 45

Ala Ser Glu Gly Cys Tyr Arg Trp Leu Ser Thr Arg Pro Glu Val Ala  
 50 55 60

Ser Ile Glu Pro Leu Gly Leu Asp Glu Gln Gln Cys Ser Gln Lys Ala  
 65 70 75 80

Val Val Gln Ala Arg Leu Thr Gln Pro Ala Arg Leu Thr Ser Ile Ile  
 85 90 95

Phe Ala Glu Asp Ile Thr Thr Gly Gln Val Leu Arg Cys Asp Ala Ile  
 100 105 110

Val Asp Leu Ile His Asp Ile Gln Ile Val Ser Thr Thr Arg Glu Leu  
 115 120 125

Tyr Leu Glu Asp Ser Pro Leu Glu Leu Lys Ile Gln Ala Leu Asp Ser  
 130 135 140

Glu Gly Asn Thr Phe Ser Thr Leu Ala Gly Leu Val Phe Glu Trp Thr  
 145 150 155 160



Ile Val Lys Asp Ser Glu Ala Asp Arg Phe Ser Asp Ser His Asn Ala  
 165 170 175  
 Leu Arg Ile Leu Thr Phe Leu Glu Ser Thr Tyr Ile Pro Pro Ser Tyr  
 180 185 190  
 Ile Ser Glu Met Glu Lys Ala Ala Lys Gln Gly Asp Thr Ile Leu Val  
 195 200 205  
 Ser Gly Met Lys Thr Gly Ser Ser Lys Leu Lys Ala Arg Ile Gln Glu  
 210 215 220  
 Ala Val Tyr Lys Asn Val Arg Pro Ala Glu Val Arg Leu Leu Ile Leu  
 225 230 235 240  
 Glu Asn Ile Leu Leu Asn Pro Ala Tyr Asp Val Tyr Leu Met Val Gly  
 245 250 255  
 Thr Ser Ile His Tyr Lys Val Gln Lys Ile Arg Gln Gly Lys Ile Thr  
 260 265 270  
 Glu Leu Ser Met Pro Ser Asp Gln Tyr Glu Leu Gln Leu Gln Asn Ser  
 275 280 285  
 Ile Pro Gly Pro Glu Gly Asp Pro Thr Arg Pro Val Ala Val Leu Ala  
 290 295 300  
 Gln Asp Thr Ser Met Val Thr Ala Leu Gln Leu Gly Gln Ser Ser Leu  
 305 310 315 320  
 Val Leu Gly His Arg Ser Ile Arg Met Gln Gly Ala Ser Arg Leu Pro  
 325 330 335  
 Asn Ser Thr Ile Tyr Val Val Glu Pro Gly Tyr Leu Gly Phe Thr Val  
 340 345 350  
 His Pro Gly Asp Arg Trp Val Leu Glu Thr Gly Arg Leu Tyr Glu Ile  
 355 360 365  
 Thr Ile Glu Val Phe Asp Lys Phe Ser Asn Lys Val Tyr Val Ser Asp  
 370 375 380  
 Asn Ile Arg Ile Glu Thr Val Leu Pro Ala Glu Phe Phe Glu Val Leu  
 385 390 395 400  
 Ser Ser Ser Gln Asn Gly Ser Tyr His Arg Ile Arg Ala Leu Lys Arg  
 405 410 415  
 Gly Gln Thr Ala Ile Asp Ala Ala Leu Thr Ser Val Val Asp Gln Asp  
 420 425 430  
 Gly Gly Val His Ile Leu Gln Val Pro Val Trp Asn Gln Gln Glu Val  
 435 440 445  
 Glu Ile His Ile Pro Ile Thr Leu Tyr Pro Ser Ile Leu Thr Phe Pro  
 450 455 460  
 Trp Gln Pro Lys Thr Gly Ala Tyr Gln Tyr Thr Ile Arg Ala His Gly  
 465 470 475 480

Gly Ser Gly Asn Phe Ser Trp Ser Ser Ser Ser His Leu Val Ala Thr  
 485 490 495  
 Val Thr Val Lys Gly Val Met Thr Thr Gly Ser Asp Ile Gly Phe Ser  
 500 505 510  
 Val Ile Gln Ala His Asp Val Gln Asn Pro Leu His Phe Gly Glu Met  
 515 520 525  
 Lys Val Tyr Val Ile Glu Pro His Ser Met Glu Phe Ala Pro Cys Gln  
 530 535 540  
 Val Glu Ala Arg Val Gly Gln Ala Leu Glu Leu Pro Leu Arg Ile Ser  
 545 550 555 560  
 Gly Leu Met Pro Gly Gly Ala Ser Glu Val Val Thr Leu Ser Asp Cys  
 565 570 575  
 Ser His Phe Asp Leu Ala Val Glu Val Glu Asn Gln Gly Val Phe Gln  
 580 585 590  
 Pro Leu Pro Gly Arg Leu Pro Pro Gly Ser Glu His Cys Ser Gly Val  
 595 600 605  
 Arg Val Lys Ala Glu Ala Gln Gly Ser Thr Thr Leu Leu Val Ser Tyr  
 610 615 620  
 Arg His Gly His Val His Leu Ser Ala Lys Ile Thr Ile Ala Ala Tyr  
 625 630 635 640  
 Leu Pro Leu Lys Ala Val Asp Pro Ser Ser Val Ala Leu Val Thr Leu  
 645 650 655  
 Gly Ser Ser Lys Glu Met Leu Phe Glu Gly Gly Pro Arg Pro Trp Ile  
 660 665 670  
 Leu Glu Pro Ser Lys Phe Phe Gln Asn Val Thr Ala Glu Asp Thr Asp  
 675 680 685  
 Ser Ile Gly Leu Ala Leu Phe Ala Pro His Ser Ser Arg Asn Tyr Gln  
 690 695 700  
 Gln His Trp Ile Leu Val Thr Cys Gln Ala Leu Gly Glu Gln Val Ile  
 705 710 715 720  
 Ala Leu Ser Val Gly Asn Lys Pro Ser Leu Thr Asn Pro Phe Pro Ala  
 725 730 735  
 Val Glu Pro Ala Val Val Lys Phe Val Cys Ala Pro Pro Ser Arg Leu  
 740 745 750  
 Thr Leu Val Pro Val Tyr Thr Ser Pro Gln Leu Asp Met Ser Cys Pro  
 755 760 765  
 Leu Leu Gln Gln Asn Lys Gln Val Val Pro Val Ser Ser His Arg Asn  
 770 775 780  
 Pro Leu Leu Asp Leu Ala Ala Tyr Asp Gln Glu Gly Arg Arg Phe Asp  
 785 790 795 800

Asn Phe Ser Ser Leu Ser Ile Gln Trp Glu Ser Thr Arg Pro Val Leu  
805 810 815

Ala Ala Ser Ser Leu Ser Cys His Ala Ala Gly Val Pro Gly Arg  
820 825 830

 $\langle 210 \rangle$  1243

<211> 89

<212> PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

<222> (39)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (65)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1243

Met Pro Val Pro Leu Leu Ala Ser Ala Ala Trp Cys His Leu Cys Ala  
1 5 10 15

Gly Ala Leu Pro Ala Trp Leu Trp Leu Pro Gly Gly Gln Leu Leu His  
20 25 30

Asn Gly Thr Cys Val Pro Xaa Thr Ala Cys Pro Cys Thr Gln His Ser  
35 40 45

Leu Pro Trp Gly Leu Thr Leu Thr Leu Glu Glu Gln Ala Gln Glu Leu  
50 55 60

Xaa Pro Gly Thr Val Leu Thr Arg Asn Cys Thr Pro Leu Cys Leu Pro  
65 70 75 80

Leu Trp Ser Leu Gln Leu Leu Pro Arg  
85

<210> 1244

<211> 79

<212> PRT

<213> Homo sapiens

<400> 1244

Ser Gly Trp Gln Val Pro Ser Ser Val Lys His Leu Pro Tyr Asp Asn  
1 5 10 15

Leu Arg Ser His Cys Val Ala Asp Glu Gly Glu Thr Glu Val Glu Gly  
20 25 30

Thr Arg Ala Thr Trp Val Glu His Ser Gly Arg Pro Gly Val Gly Ser  
35 40 45

Gly Arg Pro Pro Gly Thr Ser Leu Thr Thr Leu Pro Leu Leu Leu Thr

50                                      55                                      60  
 His Leu Ser Leu Thr Cys Pro Leu Gly Gly Asp Phe Ser Lys Arg  
 65                                      70                                      75  
  
 <210> 1245  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 1245  
 Met Pro Val Pro Leu Leu Ala Ser Ala Ala Trp Cys His Leu Cys Ala  
 1                                      5                                      10                                      15  
  
 Gly Ala Leu Pro Ala Trp Leu Trp Leu Pro Trp Arg Ala Ala Ala Ala  
 20                                      25                                      30  
  
 Gln Trp His Val Cys Ala Ser His Cys Leu Pro Leu His Pro Ala Phe  
 35                                      40                                      45  
  
 Ser Ala Leu Gly Pro His Pro Asp Pro Gly Arg Ala Gly Pro Gly Ala  
 50                                      55                                      60  
  
 Ala Pro Arg Asp Cys Ala His Pro Glu Leu His Pro Leu Cys Leu Pro  
 65                                      70                                      75                                      80  
  
 Arg Trp Ser Leu Gln Leu Leu Pro Arg  
 85

<210> 1246  
 <211> 334  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (124)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (129)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (214)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (224)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1246  
 Met Asp Gln Ala Leu Ser Leu Trp Phe Leu Leu Gly Trp Ile Gly Gly

1	5	10	15
Asp Ser Cys Asn Leu Ile Gly Ser Phe Leu Ala Asp Gln Leu Pro Leu	20	25	30
Gln Thr Tyr Thr Ala Val Tyr Tyr Val Leu Ala Asp Leu Val Met Leu	35	40	45
Thr Leu Tyr Phe Tyr Tyr Lys Phe Arg Thr Arg Pro Ser Leu Leu Ser	50	55	60
Ala Pro Ile Asn Ser Val Leu Leu Phe Leu Met Gly Met Ala Cys Ala	65	70	75
Thr Pro Leu Leu Ser Ala Ala Gly Pro Val Ala Ala Pro Arg Glu Ala	85	90	95
Phe Arg Gly Arg Ala Leu Leu Ser Val Glu Ser Gly Ser Lys Pro Phe	100	105	110
Thr Arg Gln Glu Val Ile Gly Phe Val Ile Gly Xaa Ile Ser Ser Val	115	120	125
Xaa Tyr Leu Leu Ser Arg Leu Pro Gln Ile Arg Thr Asn Phe Leu Arg	130	135	140
Lys Ser Thr Gln Gly Ile Ser Tyr Ser Leu Phe Ala Leu Val Met Leu	145	150	155
Gly Asn Thr Leu Tyr Gly Leu Ser Val Leu Leu Lys Asn Pro Glu Glu	165	170	175
Gly Gln Ser Glu Gly Ser Tyr Leu Leu His His Leu Pro Trp Leu Val	180	185	190
Gly Ser Leu Gly Val Leu Leu Leu Asp Thr Ile Ile Ser Ile Gln Phe	195	200	205
Leu Val Tyr Arg Arg Xaa Pro Pro Pro Arg Ser Leu Ser Pro Ser Xaa	210	215	220
Pro Ala Asp Gln Asn Gln Ala Glu Arg Arg Arg Thr Gly Thr Thr Gly	225	230	235
Cys His Thr Arg Gln Glu Glu Val Trp Thr Val Met Val Arg Arg Pro	245	250	255
Cys Ile Ser Leu Arg Val Ala Ser Gly Ser Ser Val Asp Arg Thr Val	260	265	270
Pro Pro Gly Thr His Leu Gln Val Asp Pro Glu Ala Ser Arg Pro Gly	275	280	285
Leu Glu Arg Arg Pro Gln Gly Leu Ser Gly Asp Ser Glu Ala Ala Pro	290	295	300
Pro Thr Thr Tyr Leu Ile Leu Pro Thr Gln Asp Cys Pro Val Asn Ser	305	310	315
Arg Gln Leu Asn Lys Gln Ala Gly Tyr Ser Gly Ser His Leu			

325

330

&lt;210&gt; 1247

&lt;211&gt; 226

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1247

Met Asp Gln Ala Leu Ser Leu Trp Phe Leu Leu Gly Trp Ile Gly Gly  
 1 5 10 15

Asp Ser Cys Asn Leu Ile Gly Ser Phe Leu Ala Asp Gln Leu Pro Leu  
 20 25 30

Gln Thr Tyr Thr Ala Val Tyr Tyr Val Leu Ala Asp Leu Val Met Leu  
 35 40 45

Thr Leu Tyr Phe Tyr Tyr Lys Phe Arg Thr Arg Pro Ser Leu Leu Ser  
 50 55 60

Ala Pro Ile Asn Ser Val Leu Leu Phe Leu Met Gly Met Ala Cys Ala  
 65 70 75 80

Thr Pro Leu Leu Ser Ala Ala Gly Pro Val Ala Ala Pro Arg Glu Ala  
 85 90 95

Phe Arg Gly Arg Ala Leu Leu Ser Val Glu Ser Gly Ser Lys Pro Phe  
 100 105 110

Thr Arg Gln Glu Val Ile Gly Phe Val Ile Gly Ser Ile Ser Ser Val  
 115 120 125

Leu Tyr Leu Leu Ser Arg Leu Pro Gln Ile Arg Thr Asn Phe Leu Arg  
 130 135 140

Lys Ser Thr Gln Gly Ile Ser Tyr Ser Leu Phe Ala Leu Val Met Leu  
 145 150 155 160

Gly Asn Thr Leu Tyr Gly Leu Ser Val Leu Leu Lys Asn Pro Glu Glu  
 165 170 175

Gly Gln Ser Glu Gly Ser Tyr Leu Leu His His Leu Pro Trp Leu Val  
 180 185 190

Gly Ser Leu Gly Val Leu Leu Leu Asp Thr Ile Ile Ser Ile Gln Phe  
 195 200 205

Leu Val Tyr Arg Arg Ser Thr Ala Ala Ser Glu Leu Glu Pro Leu Leu  
 210 215 220

Pro Ser

225

&lt;210&gt; 1248

&lt;211&gt; 184

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1248

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Met Lys Ile Leu Val Ala Phe Leu Val Val Leu Thr Ile Phe Gly Ile
 1             5             10             15

Gln Ser His Gly Tyr Glu Val Phe Asn Ile Ile Ser Pro Ser Asn Asn
          20             25             30

Gly Gly Asn Val Gln Glu Thr Val Thr Ile Asp Asn Glu Lys Asn Thr
          35             40             45

Ala Ile Ile Asn Ile His Ala Gly Ser Cys Ser Ser Thr Thr Ile Phe
 50             55             60

Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val Leu Ser Arg Arg Ala
 65             70             75             80

Cys Phe Ile Leu Lys Met Asp His Gln Asn Ile Pro Pro Leu Asn Asn
          85             90             95

Leu Gln Trp Tyr Ile Tyr Glu Lys Gln Ala Leu Asp Asn Met Phe Ser
          100             105             110

Ser Lys Tyr Thr Trp Val Lys Tyr Asn Pro Leu Glu Ser Leu Ile Lys
          115             120             125

Asp Val Asp Trp Phe Leu Leu Gly Ser Pro Ile Glu Lys Leu Cys Lys
          130             135             140

His Ile Pro Leu Tyr Lys Gly Glu Val Val Glu Asn Thr His Asn Val
          145             150             155             160

Gly Ala Gly Gly Cys Ala Lys Ala Gly Leu Leu Gly Ile Leu Gly Ile
          165             170             175

Ser Ile Cys Ala Asp Ile His Val
          180

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&lt;210&gt; 1249

&lt;211&gt; 184

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1249

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Met Lys Ile Leu Val Ala Phe Leu Val Val Leu Thr Ile Phe Gly Ile
 1             5             10             15

Gln Ser His Gly Tyr Glu Val Phe Asn Ile Ile Ser Pro Ser Asn Asn
          20             25             30

Gly Gly Asn Val Gln Glu Thr Val Thr Ile Asp Asn Glu Lys Asn Thr
          35             40             45

Ala Ile Ile Asn Ile His Ala Gly Ser Cys Ser Ser Thr Thr Ile Phe
 50             55             60

Asp Tyr Lys His Gly Tyr Ile Ala Ser Arg Val Leu Ser Arg Arg Ala

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65					70					75						80
Cys	Phe	Ile	Leu	Lys 85	Met	Asp	His	Gln	Asn 90	Ile	Pro	Pro	Leu	Asn 95	Asn	
Leu	Gln	Trp	Tyr 100	Ile	Tyr	Glu	Lys	Gln 105	Ala	Leu	Asp	Asn	Met 110	Phe	Ser	
Ser	Lys	Tyr 115	Thr	Trp	Val	Lys	Tyr 120	Asn	Pro	Leu	Glu	Ser 125	Leu	Ile	Lys	
Asp	Val 130	Asp	Trp	Phe	Leu	Leu 135	Gly	Ser	Pro	Ile	Glu 140	Lys	Leu	Cys	Lys	
His 145	Ile	Pro	Leu	Tyr 150	Lys	Gly	Glu	Val	Val	Glu 155	Asn	Thr	His	Asn	Val 160	
Gly	Ala	Gly	Gly	Cys 165	Ala	Lys	Ala	Gly	Leu 170	Leu	Gly	Ile	Leu	Gly 175	Ile	
Ser	Ile	Cys	Ala	Asp 180	Ile	His	Val									

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<210> 1250
<211> 173
<212> PRT
<213> Homo sapiens
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<400> 1250																
Met	Ala	Val	Arg	Ala	Leu	Lys	Leu	Leu	Thr	Thr	Leu	Leu	Ala	Val	Val	
1				5					10					15		
Ala	Ala	Ala	Ser	Gln	Ala	Glu	Val	Glu	Ser	Glu	Ala	Gly	Trp	Gly	Met	
			20					25					30			
Val	Thr	Pro	Asp	Leu	Leu	Phe	Ala	Glu	Gly	Thr	Ala	Ala	Tyr	Ala	Arg	
		35					40					45				
Gly	Asp	Trp	Pro	Gly	Val	Val	Leu	Ser	Met	Glu	Arg	Ala	Leu	Arg	Ser	
	50					55					60					
Arg	Ala	Ala	Leu	Arg	Ala	Leu	Arg	Leu	Arg	Cys	Arg	Thr	Gln	Cys	Ala	
65					70					75					80	
Ala	Asp	Phe	Pro	Trp	Glu	Leu	Asp	Pro	Asp	Trp	Ser	Pro	Ser	Pro	Ala	
				85					90					95		
Gln	Ala	Ser	Gly	Ala	Ala	Ala	Leu	Arg	Asp	Leu	Ser	Phe	Phe	Gly	Gly	
			100					105					110			
Leu	Leu	Arg	Arg	Ala	Ala	Cys	Leu	Arg	Arg	Cys	Leu	Gly	Pro	Pro	Ala	
		115					120					125				
Ala	Thr	Arg	Ser	Ala	Lys	Arg	Trp	Ser	Trp	Ser	Ser	Ala	Ser	Gly	Pro	
	130					135					140					
Leu	Gln	Leu	Pro	Ala	Gly	Arg	Leu	Leu	Gln	Asp	Gln	Gln	Val	Gly	Glu	
145					150					155					160	



Ser Cys Cys Cys Ser Thr His Leu Leu Arg Gly Gln Ser  
 165 170

<210> 1251

<211> 359

<212> PRT

<213> Homo sapiens

<400> 1251

Met Ala Val Arg Ala Leu Lys Leu Leu Thr Thr Leu Leu Ala Val Val  
 1 5 10 15

Ala Ala Ala Ser Gln Ala Glu Val Glu Ser Glu Ala Gly Trp Gly Met  
 20 25 30

Val Thr Pro Asp Leu Leu Phe Ala Glu Gly Thr Ala Ala Tyr Ala Arg  
 35 40 45

Gly Asp Trp Pro Gly Val Val Leu Ser Met Glu Arg Ala Leu Arg Ser  
 50 55 60

Arg Ala Ala Leu Arg Ala Leu Arg Leu Arg Cys Arg Thr Gln Cys Ala  
 65 70 75 80

Ala Asp Phe Pro Trp Glu Leu Asp Pro Asp Trp Ser Pro Ser Pro Ala  
 85 90 95

Gln Ala Ser Gly Ala Ala Ala Leu Arg Asp Leu Ser Phe Phe Gly Gly  
 100 105 110

Leu Leu Arg Arg Ala Ala Cys Leu Arg Arg Cys Leu Gly Pro Pro Ala  
 115 120 125

Ala His Ser Leu Ser Glu Glu Met Glu Leu Glu Phe Arg Lys Arg Ser  
 130 135 140

Pro Tyr Asn Tyr Leu Gln Val Ala Tyr Phe Lys Ile Asn Lys Leu Glu  
 145 150 155 160

Lys Ala Val Ala Ala Ala His Thr Phe Phe Val Gly Asn Pro Glu His  
 165 170 175

Met Glu Met Gln Gln Asn Leu Asp Tyr Tyr Gln Thr Met Ser Gly Val  
 180 185 190

Lys Glu Ala Asp Phe Lys Asp Leu Glu Thr Gln Pro His Met Gln Glu  
 195 200 205

Phe Arg Leu Gly Val Arg Leu Tyr Ser Glu Glu Gln Pro Gln Glu Ala  
 210 215 220

Val Pro His Leu Glu Ala Ala Leu Gln Glu Tyr Phe Val Ala Tyr Glu  
 225 230 235 240

Glu Cys Arg Ala Leu Cys Glu Gly Pro Tyr Asp Tyr Asp Gly Tyr Asn  
 245 250 255

Tyr Leu Glu Tyr Asn Ala Asp Leu Phe Gln Ala Ile Thr Asp His Tyr  
 260 265 270  
 Ile Gln Val Leu Asn Cys Lys Gln Asn Cys Val Thr Glu Leu Ala Ser  
 275 280 285  
 His Pro Ser Arg Glu Lys Pro Phe Glu Asp Phe Leu Pro Ser His Tyr  
 290 295 300  
 Asn Tyr Leu Gln Phe Ala Tyr Tyr Asn Ile Gly Asn Tyr Thr Gln Ala  
 305 310 315 320  
 Val Glu Cys Ala Lys Thr Tyr Leu Leu Phe Phe Pro Asn Asp Glu Val  
 325 330 335  
 Met Asn Gln Asn Leu Ala Leu Leu Cys Ser Tyr Ala Trp Arg Arg Thr  
 340 345 350  
 His Gln Ile His Arg Pro Pro  
 355

<210> 1252  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens

<400> 1252  
 Met Thr Ile Phe Thr Pro Phe Leu Val Leu Leu Leu Val Asn Ser  
 1 5 10 15  
 Pro Arg Phe Ser Thr Ile Thr Leu Met Arg Ser Gly Phe His Asn Pro  
 20 25 30  
 Ser Val Cys Leu Ser Phe Thr Leu Lys Pro Gln Cys Tyr Leu Val Leu  
 35 40 45  
 Met Tyr Gln Lys Asn Arg Arg Gln Asp Gly Ser Lys Val Phe Phe Lys  
 50 55 60  
 Thr Ala Arg Leu Lys Phe Tyr Leu Asn Ile Thr Ala Lys  
 65 70 75

<210> 1253  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens

<400> 1253  
 Met Thr Ile Phe Thr Pro Phe Leu Val Leu Leu Leu Val Asn Ser  
 1 5 10 15  
 Pro Arg Phe Ser Thr Ile Thr Leu Met Arg Ser Gly Phe His Asn Pro  
 20 25 30  
 Ser Val Cys Leu Ser Phe Thr Leu Lys Pro Gln Cys Tyr Leu Val Leu  
 35 40 45

Met Tyr Gln Lys Asn Arg Arg Gln Asp Gly Ser Lys Val Phe Phe Lys  
 50 55 60

Thr Ala Arg Leu Lys Phe Tyr Leu Asn Ile Thr Ala Lys  
 65 70 75

<210> 1254

<211> 140

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (136)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1254

Met Ala Ser Leu Gly Leu Gln Leu Val Gly Tyr Ile Leu Gly Leu Leu  
 1 5 10 15

Gly Leu Leu Gly Thr Leu Val Ala Met Leu Leu Pro Ser Trp Lys Thr  
 20 25 30

Ser Ser Tyr Val Gly Ala Ser Ile Val Thr Ala Val Gly Phe Ser Lys  
 35 40 45

Gly Leu Trp Met Glu Cys Ala Thr His Ser Thr Gly Ile Thr Gln Cys  
 50 55 60

Asp Ile Tyr Ser Thr Leu Leu Gly Leu Pro Ala Asp Ile Gln Ala Ala  
 65 70 75 80

Gln Ala Met Met Val Thr Ser Ser Ala Ile Ser Ser Leu Ala Cys Ile  
 85 90 95

Ile Ser Val Val Gly Met Arg Cys Thr Val Phe Cys Gln Glu Ser Arg  
 100 105 110

Ala Lys Asp Arg Val Ala Val Ala Gly Gly Val Phe Phe Ile Leu Gly  
 115 120 125

Ser Leu Leu Gly Phe Ile Pro Xaa Ala Trp Asn Leu  
 130 135 140

<210> 1255

<211> 86

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (33)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

&lt;221&gt; SITE

&lt;222&gt; (43)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1255

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Arg Arg Phe Tyr Ser Pro Leu Val Pro Asp Ser Met Lys Phe Glu Ile
 1           5           10           15
Gly Glu Ala Leu Tyr Leu Gly Ile Ile Ser Ser Leu Phe Ser Leu Ile
           20           25           30
Xaa Gly Ile Ile Leu Cys Phe Ser Cys Ser Xaa Gln Arg Asn Arg Ser
           35           40           45
Asn Tyr Tyr Asp Ala Tyr Gln Ala Gln Pro Leu Ala Thr Arg Ser Ser
           50           55           60
Pro Arg Pro Gly Gln Pro Pro Lys Val Lys Ser Glu Phe Asn Ser Tyr
           65           70           75           80
Ser Leu Thr Gly Tyr Val
           85

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&lt;210&gt; 1256

&lt;211&gt; 230

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1256

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Met Ala Ser Leu Gly Leu Gln Leu Val Gly Tyr Ile Leu Gly Leu Leu
 1           5           10           15
Gly Leu Leu Gly Thr Leu Val Ala Met Leu Leu Pro Ser Trp Lys Thr
           20           25           30
Ser Ser Tyr Val Gly Ala Ser Ile Val Thr Ala Val Gly Phe Ser Lys
           35           40           45
Gly Leu Trp Met Glu Cys Ala Thr His Ser Thr Gly Ile Thr Gln Cys
           50           55           60
Asp Ile Tyr Ser Thr Leu Leu Gly Leu Pro Ala Asp Ile Gln Ala Ala
           65           70           75           80
Gln Ala Met Met Val Thr Ser Ser Ala Ile Ser Ser Leu Ala Cys Ile
           85           90           95
Ile Ser Val Val Gly Met Arg Cys Thr Val Phe Cys Gln Glu Ser Arg
           100           105           110
Ala Lys Asp Arg Val Ala Val Ala Gly Gly Val Phe Phe Ile Leu Gly
           115           120           125
Gly Leu Leu Gly Phe Ile Pro Val Ala Trp Asn Leu His Gly Ile Leu
           130           135           140
Arg Asp Phe Tyr Ser Pro Leu Val Pro Asp Ser Met Lys Phe Glu Ile
           145           150           155           160

```

[illegible]

```
<210> 1257
<211> 331
<212> PRT
<213> Homo sapiens
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<400> 1257																
Met	Trp	Leu	Trp	Glu	Asp	Gln	Gly	Gly	Leu	Leu	Gly	Pro	Phe	Ser	Phe	
1				5					10					15		
Leu	Leu	Leu	Val	Leu	Leu	Leu	Val	Thr	Arg	Ser	Pro	Val	Asn	Ala	Cys	
			20					25					30			
Leu	Leu	Thr	Gly	Ser	Leu	Phe	Val	Leu	Leu	Arg	Val	Phe	Ser	Phe	Glu	
		35					40					45				
Pro	Val	Pro	Ser	Cys	Arg	Ala	Leu	Gln	Val	Leu	Lys	Pro	Arg	Asp	Arg	
	50					55					60					
Ile	Ser	Ala	Ile	Ala	His	Arg	Gly	Gly	Ser	His	Asp	Ala	Pro	Glu	Asn	
65					70					75					80	
Thr	Leu	Ala	Ala	Ile	Arg	Gln	Ala	Ala	Lys	Asn	Gly	Ala	Thr	Gly	Val	
				85					90					95		
Glu	Leu	Asp	Ile	Glu	Phe	Thr	Ser	Asp	Gly	Ile	Pro	Val	Leu	Met	His	
			100					105					110			
Asp	Asn	Thr	Val	Asp	Arg	Thr	Thr	Asp	Gly	Thr	Gly	Arg	Leu	Cys	Asp	
		115					120					125				
Leu	Thr	Phe	Glu	Gln	Ile	Arg	Lys	Leu	Asn	Pro	Ala	Ala	Asn	His	Arg	
	130					135					140					
Leu	Arg	Asn	Asp	Phe	Pro	Asp	Glu	Lys	Ile	Pro	Thr	Leu	Arg	Glu	Ala	
145					150					155					160	
Val	Ala	Glu	Cys	Leu	Asn	His	Asn	Leu	Thr	Ile	Phe	Phe	Asp	Val	Lys	
				165					170					175		
Gly	His	Ala	His	Lys	Ala	Thr	Glu	Ala	Leu	Lys	Lys	Met	Tyr	Met	Glu	
			180					185					190			

Phe Pro Gln Leu Tyr Asn Asn Ser Val Val Cys Ser Phe Leu Pro Glu  
 195 200 205  
 Val Ile Tyr Lys Met Arg Gln Thr Asp Arg Asp Val Ile Thr Ala Leu  
 210 215 220  
 Thr His Arg Pro Trp Ser Leu Ser His Thr Gly Asp Gly Lys Pro Arg  
 225 230 235 240  
 Tyr Asp Thr Phe Trp Lys His Phe Ile Phe Val Met Met Asp Ile Leu  
 245 250 255  
 Leu Asp Trp Ser Met His Asn Ile Leu Trp Tyr Leu Cys Gly Ile Ser  
 260 265 270  
 Ala Phe Leu Met Gln Lys Asp Phe Val Ser Pro Ala Tyr Leu Lys Lys  
 275 280 285  
 Trp Ser Ala Lys Gly Ile Gln Val Val Gly Trp Thr Val Asn Thr Phe  
 290 295 300  
 Asp Glu Lys Ser Tyr Tyr Glu Ser His Leu Gly Ser Ser Tyr Ile Thr  
 305 310 315 320  
 Asp Ser Met Val Glu Asp Cys Glu Pro His Phe  
 325 330

<210> 1258  
 <211> 27  
 <212> PRT  
 <213> Homo sapiens

<400> 1258  
 Gly Thr Pro Ala Gly Thr Gly Pro Glu Phe Pro Gly Arg Pro Thr Arg  
 1 5 10 15  
 Pro Ile Gly Val His Leu His Ser Val Arg Asp  
 20 25

<210> 1259  
 <211> 485  
 <212> PRT  
 <213> Homo sapiens

<400> 1259  
 Ala Arg Gly Arg Leu Leu Pro Trp Trp Leu Ala Ala Gly Cys Ser Met  
 1 5 10 15  
 Ser Arg Leu Gly Ala Leu Gly Gly Ala Arg Ala Gly Leu Gly Leu Leu  
 20 25 30  
 Leu Gly Thr Ala Ala Gly Leu Gly Phe Leu Cys Leu Leu Tyr Ser Gln  
 35 40 45  
 Arg Trp Lys Arg Thr Gln Arg His Gly Arg Ser Gln Ser Leu Pro Asn  
 50 55 60

Ser Leu Asp Tyr Thr Gln Thr Ser Asp Pro Gly Arg His Val Met Leu  
 65 70 75 80  
 Leu Arg Ala Val Pro Gly Gly Ala Gly Asp Ala Ser Val Leu Pro Ser  
 85 90 95  
 Leu Pro Arg Glu Gly Gln Glu Lys Val Leu Asp Arg Leu Asp Phe Val  
 100 105 110  
 Leu Thr Ser Leu Val Ala Leu Arg Arg Glu Val Glu Glu Leu Arg Ser  
 115 120 125  
 Ser Leu Arg Gly Leu Ala Gly Glu Ile Val Gly Glu Val Arg Cys His  
 130 135 140  
 Met Glu Glu Asn Gln Arg Val Ala Arg Arg Arg Arg Phe Pro Phe Val  
 145 150 155 160  
 Arg Glu Arg Ser Asp Ser Thr Gly Ser Ser Ser Val Tyr Phe Thr Ala  
 165 170 175  
 Ser Ser Gly Ala Thr Phe Thr Asp Ala Glu Ser Glu Gly Gly Tyr Thr  
 180 185 190  
 Thr Ala Asn Ala Glu Ser Asp Asn Glu Arg Asp Ser Asp Lys Glu Ser  
 195 200 205  
 Glu Asp Gly Glu Asp Glu Val Ser Cys Glu Thr Val Lys Met Gly Arg  
 210 215 220  
 Lys Asp Ser Leu Asp Leu Glu Glu Glu Ala Ala Ser Gly Ala Ser Ser  
 225 230 235 240  
 Ala Leu Glu Ala Gly Gly Ser Ser Gly Leu Glu Asp Val Leu Pro Leu  
 245 250 255  
 Leu Gln Gln Ala Asp Glu Leu His Arg Gly Asp Glu Gln Gly Lys Arg  
 260 265 270  
 Glu Gly Phe Gln Leu Leu Leu Asn Asn Lys Leu Val Tyr Gly Ser Arg  
 275 280 285  
 Gln Asp Phe Leu Trp Arg Leu Ala Arg Ala Tyr Ser Asp Met Cys Glu  
 290 295 300  
 Leu Thr Glu Glu Val Ser Glu Lys Lys Ser Tyr Ala Leu Asp Gly Lys  
 305 310 315 320  
 Glu Glu Ala Glu Ala Ala Leu Glu Lys Gly Asp Glu Ser Ala Asp Cys  
 325 330 335  
 His Leu Trp Tyr Ala Val Leu Cys Gly Gln Leu Ala Glu His Glu Ser  
 340 345 350  
 Ile Gln Arg Arg Ile Gln Ser Gly Phe Ser Phe Lys Glu His Val Asp  
 355 360 365  
 Lys Ala Ile Ala Leu Gln Pro Glu Asn Pro Met Ala His Phe Leu Leu  
 370 375 380

Gly Arg Trp Cys Tyr Gln Val Ser His Leu Ser Trp Leu Glu Lys Lys  
385 390 395 400

Thr Ala Thr Ala Leu Leu Glu Ser Pro Leu Ser Ala Thr Val Glu Asp  
405 410 415

Ala Leu Gln Ser Phe Leu Lys Ala Glu Glu Leu Gln Pro Gly Phe Ser  
420 425 430

Lys Ala Gly Arg Val Tyr Ile Ser Lys Cys Tyr Arg Glu Leu Gly Lys  
435 440 445

Asn Ser Glu Ala Arg Trp Trp Met Lys Leu Ala Leu Glu Leu Pro Asp  
450 455 460

Val Thr Lys Glu Asp Leu Ala Ile Gln Lys Asp Leu Glu Glu Leu Glu  
465 470 475 480

Val Ile Leu Arg Asp  
485

<210> 1260

<211> 470

<212> PRT

<213> Homo sapiens

<400> 1260

Met Ser Arg Leu Gly Ala Leu Gly Gly Ala Arg Ala Gly Leu Gly Leu  
1 5 10 15

Leu Leu Gly Thr Ala Ala Gly Leu Gly Phe Leu Cys Leu Leu Tyr Ser  
20 25 30

Gln Arg Trp Lys Arg Thr Gln Arg His Gly Arg Ser Gln Ser Leu Pro  
35 40 45

Asn Ser Leu Asp Tyr Thr Gln Thr Ser Asp Pro Gly Arg His Val Met  
50 55 60

Leu Leu Arg Ala Val Pro Gly Gly Ala Gly Asp Ala Ser Val Leu Pro  
65 70 75 80

Ser Leu Pro Arg Glu Gly Gln Glu Lys Val Leu Asp Arg Leu Asp Phe  
85 90 95

Val Leu Thr Ser Leu Val Ala Leu Arg Glu Val Glu Glu Leu Arg  
100 105 110

Ser Ser Leu Arg Gly Leu Ala Gly Glu Ile Val Gly Glu Val Arg Cys  
115 120 125

His Met Glu Glu Asn Gln Arg Val Ala Arg Arg Arg Arg Phe Pro Phe  
130 135 140

Val Arg Glu Arg Ser Asp Ser Thr Gly Ser Ser Ser Val Tyr Phe Thr  
145 150 155 160



Ala Ser Ser Gly Ala Thr Phe Thr Asp Ala Glu Ser Glu Gly Gly Tyr  
 165 170 175  
 Thr Thr Ala Asn Ala Glu Ser Asp Asn Glu Arg Asp Ser Asp Lys Glu  
 180 185 190  
 Ser Glu Asp Gly Glu Asp Glu Val Ser Cys Glu Thr Val Lys Met Gly  
 195 200 205  
 Arg Lys Asp Ser Leu Asp Leu Glu Glu Glu Ala Ala Ser Gly Ala Ser  
 210 215 220  
 Ser Ala Leu Glu Ala Gly Gly Ser Ser Gly Leu Glu Asp Val Leu Pro  
 225 230 235 240  
 Leu Leu Gln Gln Ala Asp Glu Leu His Arg Gly Asp Glu Gln Gly Lys  
 245 250 255  
 Arg Glu Gly Phe Gln Leu Leu Leu Asn Asn Lys Leu Val Tyr Gly Ser  
 260 265 270  
 Arg Gln Asp Phe Leu Trp Arg Leu Ala Arg Ala Tyr Ser Asp Met Cys  
 275 280 285  
 Glu Leu Thr Glu Glu Val Ser Glu Lys Lys Ser Tyr Ala Leu Asp Gly  
 290 295 300  
 Lys Glu Glu Ala Glu Ala Ala Leu Glu Lys Gly Asp Glu Ser Ala Asp  
 305 310 315 320  
 Cys His Leu Trp Tyr Ala Val Leu Cys Gly Gln Leu Ala Glu His Glu  
 325 330 335  
 Ser Ile Gln Arg Arg Ile Gln Ser Gly Phe Ser Phe Lys Glu His Val  
 340 345 350  
 Asp Lys Ala Ile Ala Leu Gln Pro Glu Asn Pro Met Ala His Phe Leu  
 355 360 365  
 Leu Gly Arg Trp Cys Tyr Gln Val Ser His Leu Ser Trp Leu Glu Lys  
 370 375 380  
 Lys Thr Ala Thr Ala Leu Leu Glu Ser Pro Leu Ser Ala Thr Val Glu  
 385 390 395 400  
 Asp Ala Leu Gln Ser Phe Leu Lys Ala Glu Glu Leu Gln Pro Gly Phe  
 405 410 415  
 Ser Lys Ala Gly Arg Val Tyr Ile Ser Lys Cys Tyr Arg Glu Leu Gly  
 420 425 430  
 Lys Asn Ser Glu Ala Arg Trp Trp Met Lys Leu Ala Leu Glu Leu Pro  
 435 440 445  
 Asp Val Thr Lys Glu Asp Leu Ala Ile Gln Lys Asp Leu Glu Glu Leu  
 450 455 460  
 Glu Val Ile Leu Arg Asp  
 465 470

&lt;210&gt; 1261

&lt;211&gt; 37

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1261

```

Met Pro Asp Lys Arg Glu Ala Thr Ala Ala Val Ala Leu Phe Ile
 1           5           10           15

Val Pro Leu Gly Val Trp Met Arg Gly Ser Arg Gly Tyr Ser Ala Ala
          20           25           30

His Glu Gly Ser Leu
      35

```

&lt;210&gt; 1262

&lt;211&gt; 37

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1262

```

Met Pro Asp Lys Arg Glu Ala Thr Ala Ala Val Ala Leu Phe Ile
 1           5           10           15

Val Pro Leu Gly Val Trp Met Arg Gly Ser Arg Gly Tyr Ser Ala Ala
          20           25           30

His Glu Gly Ser Leu
      35

```

&lt;210&gt; 1263

&lt;211&gt; 105

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1263

```

Met Leu Val Cys Met Leu Gly Cys Leu Ala Asn Leu Val Val Val Gly
 1           5           10           15

Phe Leu Lys Glu Lys Thr Phe Pro Leu Ala Met Ala Arg Thr Arg Gly
          20           25           30

Ser Ser Leu Ser Leu Leu Pro Thr Pro Pro Phe Pro Cys Pro Cys Pro
          35           40           45

Asp Ala Ser Arg Leu Arg Glu Lys His Cys Ile Gln Thr Glu Gly Ser
          50           55           60

Ala Ala Ser Phe Gln Lys Val Ile Gly Lys Ala Leu Glu Arg Arg Ala
          65           70           75           80

Val Leu Gln Leu Ala Leu Phe Leu His His Pro Pro Ser Leu Cys Ile
          85           90           95

```

Met His Leu Leu Leu Pro Pro Gly Leu  
                   100                  105

<210> 1264  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 1264  
 Met Leu Val Cys Met Leu Gly Cys Leu Ala Asn Leu Val Val Val Gly  
   1                  5                  10                  15  
 Phe Leu Lys Glu Lys Thr Phe Pro Leu Ala Met Ala Arg Thr Arg Gly  
           20                  25                  30  
 Ser Ser Leu Ser Leu Leu Pro Thr Pro Pro Phe Pro Cys Pro Cys Pro  
           35                  40                  45  
 Asp Ala Ser Arg Leu Arg Glu Lys His Cys Ile Gln Thr Glu Gly Ser  
       50                  55                  60  
 Ala Ala Ser Phe Gln Lys Val Ile Gly Lys Ala Leu Glu Arg Arg Ala  
       65                  70                  75                  80  
 Val Leu Gln Leu Ala Leu Phe Leu His His Pro Pro Ser Leu Cys Ile  
                   85                  90                  95  
 Met His Leu Leu Leu Pro Pro Gly Leu  
                   100                  105

<210> 1265  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (101)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1265  
 Met Thr Leu Cys Leu Val Thr Phe Leu Thr Ser Leu Pro Thr Ser Val  
   1                  5                  10                  15  
 Pro Ala Cys Thr Ser Cys Trp Pro Gly Phe Met Arg Ser Ser Lys Asn  
           20                  25                  30  
 Ala Tyr Asp Thr His His Trp Gly Gly Gln Arg Ser Met Asn Leu Glu  
           35                  40                  45  
 Ser Leu Thr Cys Gly Gln Leu Ala Ile Arg Trp Thr Arg Gly Trp Met  
       50                  55                  60  
 Thr Arg Pro Arg Gln Val Trp Ala Met Pro Gly Gln Thr Val Asp Val  
       65                  70                  75                  80

Tyr Leu Gly Arg Met Leu Gln Gly Val Val Leu Arg Gly Gln Thr Leu  
                             85                            90                            95

Arg Gly Arg Ala Xaa  
                             100

<210> 1266  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 1266  
 Lys Ala Val Thr Gly Trp Ala His Trp Leu Thr Pro Ile Ile Pro Ala  
       1                            5                            10                            15

Leu Trp Glu Ala Lys Ala Gly Arg Ser Leu Glu Val Arg Ile Ser Arg  
                             20                            25                            30

Pro Ala Trp Ser Thr Trp Gln Asn Leu Val Ser Thr Lys Asn Thr Lys  
                             35                            40                            45

Ile Arg  
       50

<210> 1267  
 <211> 120  
 <212> PRT  
 <213> Homo sapiens

<400> 1267  
 Glu Val Leu Phe Ser Asn Asp Ser Val Leu Gly His Phe Pro His Gln  
       1                            5                            10                            15

Ser Pro Asn Glu Arg Ala Arg Leu Tyr Phe Leu Leu Ala Trp Phe His  
                             20                            25                            30

Ala Ile Ile Gln Glu Arg Leu Arg Tyr Ala Pro Leu Gly Trp Ser Lys  
                             35                            40                            45

Lys Tyr Glu Phe Gly Glu Ser Asp Leu Arg Ser Ala Cys Asp Thr Val  
                             50                            55                            60

Asp Thr Trp Leu Asp Asp Thr Ala Lys Ala Ser Val Gly His Ala Arg  
       65                            70                            75                            80

Thr Asp Ser Gly Arg Val Ser Gly Lys Asp Ala Ala Gly Arg Gly Ala  
                             85                            90                            95

Glu Arg Pro Asp Ser Ala Trp Lys Ser Glu Leu Thr Pro Arg Asp Arg  
                             100                            105                            110

Gln Ser Leu Ala Gly His Gly Glu  
                             115                            120

<210> 1268  
 <211> 103  
 <212> PRT  
 <213> Homo sapiens

<400> 1268  
 Met Met Cys Val Val Leu Thr Thr Leu Pro Cys Leu Thr Phe Ser Ile  
     1                    5                    10                    15  
 Ala Val Thr Glu Val Gln Lys Ser Ile Asn Gly Ser Ala Asp Val Leu  
                     20                    25                    30  
 Pro Asp Met Leu Pro Asp Leu Pro Val Ser Leu Val Leu Leu Ser Leu  
             35                    40                    45  
 Ile Met Val Asp Ile Ile Glu Lys Leu Arg Ile Tyr Pro Leu Arg Gly  
             50                    55                    60  
 Ser Gln Lys Ser Ser Glu Asn Gly His Ile His Ser Thr Ser Leu Gln  
             65                    70                    75                    80  
 His Ile Lys Thr Val Thr Glu Gln Val Arg Gln Ser Pro Glu Asn Ala  
                     85                    90                    95  
 Ala Ser Pro Gln Ala Thr Asn  
                     100

<210> 1269  
 <211> 261  
 <212> PRT  
 <213> Homo sapiens

<400> 1269  
 Met Met Cys Val Val Leu Thr Thr Leu Pro Cys Leu Thr Phe Ser Ile  
     1                    5                    10                    15  
 Ala Val Thr Glu Val Gln Lys Ser Ile Asn Gly Ser Ala Asp Val Leu  
                     20                    25                    30  
 Pro Asp Met Leu Pro Asp Leu Pro Val Ser Leu Val Leu Leu Ser Leu  
             35                    40                    45  
 Ile Met Val Asp Ile Ile Glu Lys Leu Arg Ile Tyr Pro Leu Arg Gly  
             50                    55                    60  
 Ser Gln Lys Ser Ser Glu Asn Gly His Ile His Ser Thr Ser Leu Gln  
             65                    70                    75                    80  
 His Ile Lys Thr Val Thr Glu Gln Val Arg Gln Ser Pro Glu Asn Ala  
                     85                    90                    95  
 Ala Ser Pro Gln Ala Thr Asn Ser Thr Gln Val Ser Gln Pro Ser Gly  
                     100                    105                    110  
 Ala Met Thr Arg Ser Gln Glu Ser Val Phe Met Gly Pro Gln Glu Pro  
             115                    120                    125  
 Ser Cys Asp Ser Gly Ile Leu Arg Met Met Ser Arg Arg Asp Val Arg

130	135	140
Ala Glu Leu Phe Leu Trp Ser Phe Leu Leu Trp Ser Asp Thr Ile Glu		
145	150	155 160
Met Val Arg Val Ala Gly His Pro Asn Val Tyr Lys Ser Ser Trp Leu		
	165	170 175
Tyr Pro Val Tyr Ile Phe Ser Phe Ile Ser Leu Leu Arg Ile Thr Phe		
	180	185 190
Thr Pro Gln Asn Pro Leu Leu Asn Ser Leu Ser Val Leu Leu Gln Asp		
	195	200 205
Leu Pro Phe Val Phe Val Arg Leu Gly Leu Ile Ile Ala Leu Gly Thr		
	210	215 220
Ile Thr Pro Val Leu Gly Leu Cys Lys Asn Ile Leu Val Thr Leu Ser		
	225	230 235 240
Tyr Ile Tyr Phe Asn Tyr Leu Thr Arg Ile Arg Ile Phe Ser Ala Phe		
	245	250 255
Glu Met Ser Pro Phe		
	260	

<210> 1270  
 <211> 277  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (158)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (277)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1270  
 Met Gly Leu Arg Ser Trp Leu Ala Ala Pro Trp Gly Ala Leu Pro Pro  
 1 5 10 15  
 Arg Pro Pro Leu Leu Leu Leu Leu Leu Leu Leu Leu Leu Gln Pro  
 20 25 30  
 Pro Pro Pro Thr Trp Ala Leu Ser Pro Arg Ile Ser Leu Pro Leu Gly  
 35 40 45  
 Ser Glu Glu Arg Pro Phe Leu Arg Phe Glu Ala Glu His Ile Ser Asn  
 50 55 60  
 Tyr Thr Ala Leu Leu Leu Ser Arg Asp Gly Arg Thr Leu Tyr Val Gly  
 65 70 75 80  
 Ala Arg Glu Ala Leu Phe Ala Leu Ser Ser Asn Leu Ser Phe Leu Pro

85										90					95				
Gly	Gly	Glu	Tyr	Gln	Glu	Leu	Leu	Trp	Gly	Ala	Asp	Ala	Glu	Lys	Lys				
			100					105					110						
Gln	Gln	Cys	Ser	Phe	Lys	Gly	Lys	Asp	Pro	Gln	Arg	Asp	Cys	Gln	Asn				
		115					120					125							
Tyr	Ile	Lys	Ile	Leu	Leu	Pro	Leu	Ser	Gly	Ser	His	Leu	Phe	Thr	Cys				
	130					135					140								
Gly	Thr	Ala	Ala	Phe	Ser	Pro	Met	Cys	Thr	Tyr	Ile	Asn	Xaa	Glu	Asn				
145					150					155					160				
Phe	Thr	Leu	Ala	Arg	Asp	Glu	Lys	Gly	Asn	Val	Leu	Leu	Glu	Asp	Gly				
				165					170					175					
Lys	Gly	Arg	Cys	Pro	Phe	Asp	Pro	Asn	Phe	Lys	Ser	Thr	Ala	Leu	Val				
			180					185					190						
Val	Asp	Gly	Glu	Leu	Tyr	Thr	Gly	Thr	Val	Ser	Ser	Phe	Gln	Gly	Asn				
	195						200					205							
Asp	Pro	Ala	Ile	Ser	Arg	Ser	Gln	Ser	Leu	Arg	Pro	Thr	Lys	Thr	Glu				
	210					215					220								
Ser	Ser	Leu	Asn	Trp	Leu	Gln	Asp	Pro	Ala	Phe	Val	Ala	Ser	Ala	Tyr				
225					230					235					240				
Ile	Pro	Glu	Ser	Leu	Gly	Ser	Leu	Gln	Gly	Asp	Asp	Asp	Lys	Ile	Tyr				
				245					250					255					
Phe	Phe	Phe	Ser	Glu	Thr	Gly	Gln	Glu	Phe	Glu	Phe	Phe	Glu	Asn	Thr				
			260					265					270						
Ile	Val	Ser	Gly	Xaa															
		275																	

&lt;210&gt; 1271

&lt;211&gt; 832

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1271

Met	Gly	Leu	Arg	Ser	Trp	Leu	Ala	Ala	Pro	Trp	Gly	Ala	Leu	Pro	Pro		
1				5					10					15			
Arg	Pro	Pro	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Leu	Gln	Pro		
			20					25						30			
Pro	Pro	Pro	Thr	Trp	Ala	Leu	Ser	Pro	Arg	Ile	Ser	Leu	Pro	Leu	Gly		
			35				40					45					
Ser	Glu	Glu	Arg	Pro	Phe	Leu	Arg	Phe	Glu	Ala	Glu	His	Ile	Ser	Asn		
	50					55					60						
Tyr	Thr	Ala	Leu	Leu	Leu	Ser	Arg	Asp	Gly	Arg	Thr	Leu	Tyr	Val	Gly		
65					70					75					80		

Ala Arg Glu Ala Leu Phe Ala Leu Ser Ser Asn Leu Ser Phe Leu Pro  
                                     85                                    90                                    95  
 Gly Gly Glu Tyr Gln Glu Leu Leu Trp Gly Ala Asp Ala Glu Lys Lys  
                                     100                                    105                                    110  
 Gln Gln Cys Ser Phe Lys Gly Lys Asp Pro Gln Arg Asp Cys Gln Asn  
                                     115                                    120                                    125  
 Tyr Ile Lys Ile Leu Leu Pro Leu Ser Gly Ser His Leu Phe Thr Cys  
                                     130                                    135                                    140  
 Gly Thr Ala Ala Phe Ser Pro Met Cys Thr Tyr Ile Asn Met Glu Asn  
                                     145                                    150                                    155                                    160  
 Phe Thr Leu Ala Arg Asp Glu Lys Gly Asn Val Leu Leu Glu Asp Gly  
                                     165                                    170                                    175  
 Lys Gly Arg Cys Pro Phe Asp Pro Asn Phe Lys Ser Thr Ala Leu Val  
                                     180                                    185                                    190  
 Val Asp Gly Glu Leu Tyr Thr Gly Thr Val Ser Ser Phe Gln Gly Asn  
                                     195                                    200                                    205  
 Asp Pro Ala Ile Ser Arg Ser Gln Ser Leu Arg Pro Thr Lys Thr Glu  
                                     210                                    215                                    220  
 Ser Ser Leu Asn Trp Leu Gln Asp Pro Ala Phe Val Ala Ser Ala Tyr  
                                     225                                    230                                    235                                    240  
 Ile Pro Glu Ser Leu Gly Ser Leu Gln Gly Asp Asp Asp Lys Ile Tyr  
                                     245                                    250                                    255  
 Phe Phe Phe Ser Glu Thr Gly Gln Glu Phe Glu Phe Phe Glu Asn Thr  
                                     260                                    265                                    270  
 Ile Val Ser Arg Ile Ala Arg Ile Cys Lys Gly Asp Glu Gly Gly Glu  
                                     275                                    280                                    285  
 Arg Val Leu Gln Gln Arg Trp Thr Ser Phe Leu Lys Ala Gln Leu Leu  
                                     290                                    295                                    300  
 Cys Ser Arg Pro Asp Asp Gly Phe Pro Phe Asn Val Leu Gln Asp Val  
                                     305                                    310                                    315                                    320  
 Phe Thr Leu Ser Pro Ser Pro Gln Asp Trp Arg Asp Thr Leu Phe Tyr  
                                     325                                    330                                    335  
 Gly Val Phe Thr Ser Gln Trp His Arg Gly Thr Thr Glu Gly Ser Ala  
                                     340                                    345                                    350  
 Val Cys Val Phe Thr Met Lys Asp Val Gln Arg Val Phe Ser Gly Leu  
                                     355                                    360                                    365  
 Tyr Lys Glu Val Asn Arg Glu Thr Gln Gln Trp Tyr Thr Val Thr His  
                                     370                                    375                                    380  
 Pro Val Pro Thr Pro Arg Pro Gly Ala Cys Ile Thr Asn Ser Ala Arg  
                                     385                                    390                                    395                                    400



Glu Arg Lys Ile Asn Ser Ser Leu Gln Leu Pro Asp Arg Val Leu Asn  
 405 410 415  
 Phe Leu Lys Asp His Phe Leu Met Asp Gly Gln Val Arg Ser Arg Met  
 420 425 430  
 Leu Leu Leu Gln Pro Gln Ala Arg Tyr Gln Arg Val Ala Val His Arg  
 435 440 445  
 Val Pro Gly Leu His His Thr Tyr Asp Val Leu Phe Leu Gly Thr Gly  
 450 455 460  
 Asp Gly Arg Leu His Lys Ala Val Ser Val Gly Pro Arg Val His Ile  
 465 470 475 480  
 Ile Glu Glu Leu Gln Ile Phe Ser Ser Gly Gln Pro Val Gln Asn Leu  
 485 490 495  
 Leu Leu Asp Thr His Arg Gly Leu Leu Tyr Ala Ala Ser His Ser Gly  
 500 505 510  
 Val Val Gln Val Pro Met Ala Asn Cys Ser Leu Tyr Arg Ser Cys Gly  
 515 520 525  
 Asp Cys Leu Leu Ala Arg Asp Pro Tyr Cys Ala Trp Ser Gly Ser Ser  
 530 535 540  
 Cys Lys His Val Ser Leu Tyr Gln Pro Gln Leu Ala Thr Arg Pro Trp  
 545 550 555 560  
 Ile Gln Asp Ile Glu Gly Ala Ser Ala Lys Asp Leu Cys Ser Ala Ser  
 565 570 575  
 Ser Val Val Ser Pro Ser Phe Val Pro Thr Gly Glu Lys Pro Cys Glu  
 580 585 590  
 Gln Val Gln Phe Gln Pro Asn Thr Val Asn Thr Leu Ala Cys Pro Leu  
 595 600 605  
 Leu Ser Asn Leu Ala Thr Arg Leu Trp Leu Arg Asn Gly Ala Pro Val  
 610 615 620  
 Asn Ala Ser Ala Ser Cys His Val Leu Pro Thr Gly Asp Leu Leu Leu  
 625 630 635 640  
 Val Gly Thr Gln Gln Leu Gly Glu Phe Gln Cys Trp Ser Leu Glu Glu  
 645 650 655  
 Gly Phe Gln Gln Leu Val Ala Ser Tyr Cys Pro Glu Val Val Glu Asp  
 660 665 670  
 Gly Val Ala Asp Gln Thr Asp Glu Gly Gly Ser Val Pro Val Ile Ile  
 675 680 685  
 Ser Thr Ser Arg Val Ser Ala Pro Ala Gly Gly Lys Ala Ser Trp Gly  
 690 695 700  
 Ala Asp Arg Ser Tyr Trp Lys Glu Phe Leu Val Met Cys Thr Leu Phe  
 705 710 715 720

Val Leu Ala Val Leu Leu Pro Val Leu Phe Leu Leu Tyr Arg His Arg  
725 730 735

Asn Ser Met Lys Val Phe Leu Lys Gln Gly Glu Cys Ala Ser Val His  
740 745 750

Pro Lys Thr Cys Pro Val Val Leu Pro Pro Glu Thr Arg Pro Leu Asn  
755 760 765

Gly Leu Gly Pro Pro Ser Thr Pro Leu Asp His Arg Gly Tyr Gln Ser  
770 775 780

Leu Ser Asp Ser Pro Pro Gly Ala Arg Val Phe Thr Glu Ser Glu Lys  
785 790 795 800

Arg Pro Leu Ser Ile Gln Asp Ser Phe Val Glu Val Ser Pro Val Cys  
805 810 815

Pro Arg Pro Arg Val Arg Leu Gly Ser Glu Ile Arg Asp Ser Val Val  
820 825 830

<210> 1272

<211> 196

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (12)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (22)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (55)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (147)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (156)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (184)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1272

```

Met Gly Lys Trp Lys Glu Ser Leu Gln Asn Ala Xaa His Leu Pro Pro
 1           5           10           15

Ile Leu Leu Leu Arg Xaa Ile His Leu Phe Cys Ala Val Leu Ala Gly
      20           25           30

Gly Lys Glu Asn Gly Gln Met Ala Val Ser Asp Gly Ser Val Lys Gly
      35           40           45

Leu Leu Ser Val Val Arg Xaa Trp Ser Arg Gly Pro Ala Pro Asp Pro
      50           55           60

Cys Leu Val Pro Leu Ala Leu Glu Ala Leu Val Gly Ala Val His Val
      65           70           75           80

Leu His Ala Ser Arg Ala Pro Pro Arg Gly Pro Glu Leu Arg Ala Leu
      85           90           95

Leu Glu Ser Tyr Phe His Val Leu Asn Ala Asp Trp Pro Ala Gly Leu
      100          105          110

Ser Ser Gly Pro Glu Glu Ala Leu Val Thr Leu Arg Val Ser Met Leu
      115           120           125

Asp Ala Ile Pro Met Met Leu His Val Lys Thr Gly Gln Cys Leu Gln
      130          135          140

Pro Pro Xaa Ser Ala Thr Ile Ala Leu Asn Thr Xaa Leu Gly Ser Phe
      145          150          155          160

Lys Asn Lys Gln Gly Ser Trp Thr Lys Thr Gln Thr His Cys Ser Pro
      165          170          175

Cys Ser Gln Ser Ala Asp Leu Xaa His Glu Val Thr Pro Leu Gly Pro
      180          185          190

Arg Arg Trp Leu
      195

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<210> 1273

<211> 347

<212> PRT

<213> Homo sapiens

<400> 1273

```

Met Ser Ser Trp Ser Arg Gln Arg Pro Lys Ser Pro Gly Gly Ile Gln
 1           5           10           15

Pro His Val Ser Arg Thr Leu Phe Leu Leu Leu Leu Leu Ala Ala Ser
      20           25           30

Ala Trp Gly Val Thr Leu Ser Pro Lys Asp Cys Gln Val Phe Arg Ser
      35           40           45

Asp His Gly Ser Ser Ile Ser Cys Gln Pro Pro Ala Glu Ile Pro Gly

```

50					55					60					
Tyr	Leu	Pro	Ala	Asp	Thr	Val	His	Leu	Ala	Val	Glu	Phe	Phe	Asn	Leu
65					70					75					80
Thr	His	Leu	Pro	Ala	Asn	Leu	Leu	Gln	Gly	Ala	Ser	Lys	Leu	Gln	Glu
				85					90					95	
Leu	His	Leu	Ser	Ser	Asn	Gly	Leu	Glu	Ser	Leu	Ser	Pro	Glu	Phe	Leu
			100					105					110		
Arg	Pro	Val	Pro	Gln	Leu	Arg	Val	Leu	Asp	Leu	Thr	Arg	Asn	Ala	Leu
		115					120					125			
Thr	Gly	Leu	Pro	Ser	Gly	Leu	Phe	Gln	Ala	Ser	Ala	Thr	Leu	Asp	Thr
	130					135					140				
Leu	Val	Leu	Lys	Glu	Asn	Gln	Leu	Glu	Val	Leu	Glu	Val	Ser	Trp	Leu
145					150					155					160
His	Gly	Leu	Lys	Ala	Leu	Gly	His	Leu	Asp	Leu	Ser	Gly	Asn	Arg	Leu
				165					170					175	
Arg	Lys	Leu	Pro	Pro	Gly	Leu	Leu	Ala	Asn	Phe	Thr	Leu	Leu	Arg	Thr
			180					185					190		
Leu	Asp	Leu	Gly	Glu	Asn	Gln	Leu	Glu	Thr	Leu	Pro	Pro	Asp	Leu	Leu
	195						200					205			
Arg	Gly	Pro	Leu	Gln	Leu	Glu	Arg	Leu	His	Leu	Glu	Gly	Asn	Lys	Leu
	210					215					220				
Gln	Val	Leu	Gly	Lys	Asp	Leu	Leu	Leu	Pro	Gln	Pro	Asp	Leu	Arg	Tyr
225					230					235					240
Leu	Phe	Leu	Asn	Gly	Asn	Lys	Leu	Ala	Arg	Val	Ala	Ala	Gly	Ala	Phe
				245					250					255	
Gln	Gly	Leu	Arg	Gln	Leu	Asp	Met	Leu	Asp	Leu	Ser	Asn	Asn	Ser	Leu
			260					265					270		
Ala	Ser	Val	Pro	Glu	Gly	Leu	Trp	Ala	Ser	Leu	Gly	Gln	Pro	Asn	Trp
		275					280					285			
Asp	Met	Arg	Asp	Gly	Phe	Asp	Ile	Ser	Gly	Asn	Pro	Trp	Ile	Cys	Asp
	290					295					300				
Gln	Asn	Leu	Ser	Asp	Leu	Tyr	Arg	Trp	Leu	Gln	Ala	Gln	Lys	Asp	Lys
305					310					315					320
Met	Phe	Ser	Gln	Asn	Asp	Thr	Arg	Cys	Ala	Gly	Pro	Glu	Ala	Val	Lys
				325					330					335	
Gly	Gln	Thr	Leu	Leu	Ala	Val	Ala	Lys	Ser	Gln					
			340					345							

&lt;210&gt; 1274

&lt;211&gt; 347

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1274

```

Met Ser Ser Trp Ser Arg Gln Arg Pro Lys Ser Pro Gly Gly Ile Gln
 1           5           10           15

Pro His Val Ser Arg Thr Leu Phe Leu Leu Leu Leu Ala Ala Ser
      20           25           30

Ala Trp Gly Val Thr Leu Ser Pro Lys Asp Cys Gln Val Phe Arg Ser
      35           40           45

Asp His Gly Ser Ser Ile Ser Cys Gln Pro Pro Ala Glu Ile Pro Gly
 50           55           60

Tyr Leu Pro Ala Asp Thr Val His Leu Ala Val Glu Phe Phe Asn Leu
 65           70           75           80

Thr His Leu Pro Ala Asn Leu Leu Gln Gly Ala Ser Lys Leu Gln Glu
      85           90           95

Leu His Leu Ser Ser Asn Gly Leu Glu Ser Leu Ser Pro Glu Phe Leu
      100           105           110

Arg Pro Val Pro Gln Leu Arg Val Leu Asp Leu Thr Arg Asn Ala Leu
      115           120           125

Thr Gly Leu Pro Ser Gly Leu Phe Gln Ala Ser Ala Thr Leu Asp Thr
      130           135           140

Leu Val Leu Lys Glu Asn Gln Leu Glu Val Leu Glu Val Ser Trp Leu
145           150           155           160

His Gly Leu Lys Ala Leu Gly His Leu Asp Leu Ser Gly Asn Arg Leu
      165           170           175

Arg Lys Leu Pro Pro Gly Leu Leu Ala Asn Phe Thr Leu Leu Arg Thr
      180           185           190

Leu Asp Leu Gly Glu Asn Gln Leu Glu Thr Leu Pro Pro Asp Leu Leu
      195           200           205

Arg Gly Pro Leu Gln Leu Glu Arg Leu His Leu Glu Gly Asn Lys Leu
      210           215           220

Gln Val Leu Gly Lys Asp Leu Leu Leu Pro Gln Pro Asp Leu Arg Tyr
225           230           235           240

Leu Phe Leu Asn Gly Asn Lys Leu Ala Arg Val Ala Ala Gly Ala Phe
      245           250           255

Gln Gly Leu Arg Gln Leu Asp Met Leu Asp Leu Ser Asn Asn Ser Leu
      260           265           270

Ala Ser Val Pro Glu Gly Leu Trp Ala Ser Leu Gly Gln Pro Asn Trp
      275           280           285

Asp Met Arg Asp Gly Phe Asp Ile Ser Gly Asn Pro Trp Ile Cys Asp
290           295           300

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Gln Asn Leu Ser Asp Leu Tyr Arg Trp Leu Gln Ala Gln Lys Asp Lys  
 305 310 315 320

Met Phe Ser Gln Asn Asp Thr Arg Cys Ala Gly Pro Glu Ala Val Lys  
 325 330 335

Gly Gln Thr Leu Leu Ala Val Ala Lys Ser Gln  
 340 345

<210> 1275

<211> 347

<212> PRT

<213> Homo sapiens

<400> 1275

Met Ser Ser Trp Ser Arg Gln Arg Pro Lys Ser Pro Gly Gly Ile Gln  
 1 5 10 15

Pro His Val Ser Arg Thr Leu Phe Leu Leu Leu Leu Ala Ala Ser  
 20 25 30

Ala Trp Gly Val Thr Leu Ser Pro Lys Asp Cys Gln Val Phe Arg Ser  
 35 40 45

Asp His Gly Ser Ser Ile Ser Cys Gln Pro Pro Ala Glu Ile Pro Gly  
 50 55 60

Tyr Leu Pro Ala Asp Thr Val His Leu Ala Val Glu Phe Phe Asn Leu  
 65 70 75 80

Thr His Leu Pro Ala Asn Leu Leu Gln Gly Ala Ser Lys Leu Gln Glu  
 85 90 95

Leu His Leu Ser Ser Asn Gly Leu Glu Ser Leu Ser Pro Glu Phe Leu  
 100 105 110

Arg Pro Val Pro Gln Leu Arg Val Leu Asp Leu Thr Arg Asn Ala Leu  
 115 120 125

Thr Gly Leu Pro Ser Gly Leu Phe Gln Ala Ser Ala Thr Leu Asp Thr  
 130 135 140

Leu Val Leu Lys Glu Asn Gln Leu Glu Val Leu Glu Val Ser Trp Leu  
 145 150 155 160

His Gly Leu Lys Ala Leu Gly His Leu Asp Leu Ser Gly Asn Arg Leu  
 165 170 175

Arg Lys Leu Pro Pro Gly Leu Leu Ala Asn Phe Thr Leu Leu Arg Thr  
 180 185 190

Leu Asp Leu Gly Glu Asn Gln Leu Glu Thr Leu Pro Pro Asp Leu Leu  
 195 200 205

Arg Gly Pro Leu Gln Leu Glu Arg Leu His Leu Glu Gly Asn Lys Leu  
 210 215 220

Gln Val Leu Gly Lys Asp Leu Leu Leu Pro Gln Pro Asp Leu Arg Tyr  
 225 230 235 240  
 Leu Phe Leu Asn Gly Asn Lys Leu Ala Arg Val Ala Ala Gly Ala Phe  
 245 250 255  
 Gln Gly Leu Arg Gln Leu Asp Met Leu Asp Leu Ser Asn Asn Ser Leu  
 260 265 270  
 Ala Ser Val Pro Glu Gly Leu Trp Ala Ser Leu Gly Gln Pro Asn Trp  
 275 280 285  
 Asp Met Arg Asp Gly Phe Asp Ile Ser Gly Asn Pro Trp Ile Cys Asp  
 290 295 300  
 Gln Asn Leu Ser Asp Leu Tyr Arg Trp Leu Gln Ala Gln Lys Asp Lys  
 305 310 315 320  
 Met Phe Ser Gln Asn Asp Thr Arg Cys Ala Gly Pro Glu Ala Val Lys  
 325 330 335  
 Gly Gln Thr Leu Leu Ala Val Ala Lys Ser Gln  
 340 345

&lt;210&gt; 1276

&lt;211&gt; 286

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (173)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1276

Met Leu Met Leu Met Leu Leu Met Met Phe Ala Val His Cys Thr Trp  
 1 5 10 15  
 Val Thr Ser Asn Ala Tyr Ser Ser Pro Ser Val Val Leu Ala Ser Tyr  
 20 25 30  
 Asn His Asp Gly Thr Arg Asn Ile Leu Asp Asp Phe Arg Glu Ala Tyr  
 35 40 45  
 Phe Trp Leu Arg Gln Asn Thr Asp Glu His Ala Arg Val Met Ser Trp  
 50 55 60  
 Trp Asp Tyr Gly Tyr Gln Ile Ala Gly Met Ala Asn Arg Thr Thr Leu  
 65 70 75 80  
 Val Asp Asn Asn Thr Trp Asn Asn Ser His Ile Ala Leu Val Gly Lys  
 85 90 95  
 Ala Met Ser Ser Asn Glu Thr Ala Ala Tyr Lys Ile Met Arg Thr Leu  
 100 105 110  
 Asp Val Asp Tyr Val Leu Val Ile Phe Gly Gly Val Ile Gly Tyr Ser  
 115 120 125

Gly Asp Asp Ile Asn Lys Phe Leu Trp Met Val Arg Ile Ala Glu Gly  
 130 135 140  
 Glu His Pro Lys Asp Ile Arg Glu Ser Asp Tyr Phe Thr Pro Gln Gly  
 145 150 155 160  
 Glu Phe Arg Val Asp Lys Ala Gly Ser Pro Thr Leu Xaa Asn Cys Leu  
 165 170 175  
 Met Tyr Lys Met Ser Tyr Tyr Arg Phe Gly Glu Met Gln Leu Asp Phe  
 180 185 190  
 Arg Thr Pro Pro Gly Phe Asp Arg Thr Arg Asn Ala Glu Ile Gly Asn  
 195 200 205  
 Lys Asp Ile Lys Phe Lys His Leu Glu Glu Ala Phe Thr Ser Glu His  
 210 215 220  
 Trp Leu Val Arg Ile Tyr Lys Val Lys Ala Pro Asp Asn Arg Glu Thr  
 225 230 235 240  
 Leu Asp His Lys Pro Arg Val Thr Asn Ile Phe Pro Lys Gln Lys Tyr  
 245 250 255  
 Leu Ser Lys Lys Thr Thr Lys Arg Lys Arg Gly Tyr Ile Lys Asn Lys  
 260 265 270  
 Leu Val Phe Lys Lys Gly Lys Lys Ile Ser Lys Lys Thr Val  
 275 280 285

&lt;210&gt; 1277

&lt;211&gt; 286

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1277

Met Leu Met Leu Met Leu Leu Met Met Phe-Ala Val His Cys Thr Trp  
 1 5 10 15  
 Val Thr Ser Asn Ala Tyr Ser Ser Pro Ser Val Val Leu Ala Ser Tyr  
 20 25 30  
 Asn His Asp Gly Thr Arg Asn Ile Leu Asp Asp Phe Arg Glu Ala Tyr  
 35 40 45  
 Phe Trp Leu Arg Gln Asn Thr Asp Glu His Ala Arg Val Met Ser Trp  
 50 55 60  
 Trp Asp Tyr Gly Tyr Gln Ile Ala Gly Met Ala Asn Arg Thr Thr Leu  
 65 70 75 80  
 Val Asp Asn Asn Thr Trp Asn Asn Ser His Ile Ala Leu Val Gly Lys  
 85 90 95  
 Ala Met Ser Ser Asn Glu Thr Ala Ala Tyr Lys Ile Met Arg Thr Leu  
 100 105 110



Asp Val Asp Tyr Val Leu Val Ile Phe Gly Gly Val Ile Gly Tyr Ser  
 115 120 125  
 Gly Asp Asp Ile Asn Lys Phe Leu Trp Met Val Arg Ile Ala Glu Gly  
 130 135 140  
 Glu His Pro Lys Asp Ile Arg Glu Ser Asp Tyr Phe Thr Pro Gln Gly  
 145 150 155 160  
 Glu Phe Arg Val Asp Lys Ala Gly Ser Pro Thr Leu Leu Asn Cys Leu  
 165 170 175  
 Met Tyr Lys Met Ser Tyr Tyr Arg Phe Gly Glu Met Gln Leu Asp Phe  
 180 185 190  
 Arg Thr Pro Pro Gly Phe Asp Arg Thr Arg Asn Ala Glu Ile Gly Asn  
 195 200 205  
 Lys Asp Ile Lys Phe Lys His Leu Glu Glu Ala Phe Thr Ser Glu His  
 210 215 220  
 Trp Leu Val Arg Ile Tyr Lys Val Lys Ala Pro Asp Asn Arg Glu Thr  
 225 230 235 240  
 Leu Asp His Lys Pro Arg Val Thr Asn Ile Phe Pro Lys Gln Lys Tyr  
 245 250 255  
 Leu Ser Lys Lys Thr Thr Lys Arg Lys Arg Gly Tyr Ile Lys Asn Lys  
 260 265 270  
 Leu Val Phe Lys Lys Gly Lys Lys Ile Ser Lys Lys Thr Val  
 275 280 285

&lt;210&gt; 1278

&lt;211&gt; 135

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (134)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1278

Met Ser Ala Leu Arg Pro Leu Leu Leu Leu Leu Leu Pro Leu Cys Pro  
 1 5 10 15  
 Gly Pro Gly Pro Gly Pro Gly Ser Glu Ala Lys Val Thr Arg Ser Cys  
 20 25 30  
 Ala Glu Thr Arg Gln Val Leu Gly Ala Arg Gly Tyr Ser Leu Asn Leu  
 35 40 45  
 Ile Pro Pro Ala Leu Ile Ser Gly Glu His Leu Arg Val Cys Pro Gln  
 50 55 60  
 Glu Tyr Thr Cys Cys Ser Ser Glu Thr Glu Gln Arg Leu Ile Arg Glu  
 65 70 75 80

Thr Glu Ala Thr Phe Arg Gly Leu Val Glu Asp Ser Gly Ser Phe Leu  
                             85                            90                            95

Val His Thr Leu Ala Ala Arg His Arg Lys Phe Asp Asp Asn Pro Asp  
                             100                            105                            110

Pro Gly Gly Cys Pro Ser Leu Leu Cys Lys Ala Trp Arg Leu Glu Glu  
                             115                            120                            125

Met Trp Ser Ser Glu Xaa Ala  
                             130                            135

&lt;210&gt; 1279

&lt;211&gt; 134

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1279

Met Ser Ala Leu Arg Pro Leu Leu Leu Leu Leu Leu Pro Leu Cys Pro  
   1                            5                            10                            15

Gly Pro Gly Pro Gly Pro Gly Ser Glu Ala Lys Val Thr Arg Ser Cys  
                             20                            25                            30

Ala Glu Thr Arg Gln Val Leu Gly Ala Arg Gly Tyr Ser Leu Asn Leu  
                             35                            40                            45

Ile Pro Pro Ala Leu Ile Ser Gly Glu His Leu Arg Val Cys Pro Gln  
   50                            55                            60

Glu Tyr Thr Cys Cys Ser Ser Glu Thr Glu Gln Arg Leu Ile Arg Glu  
   65                            70                            75                            80

Thr Glu Ala Thr Phe Arg Gly Leu Val Glu Asp Ser Gly Ser Phe Leu  
                             85                            90                            95

Val His Thr Leu Ala Ala Arg His Arg Lys Phe Asp Asp Asn Pro Asp  
                             100                            105                            110

Pro Gly Gly Cys Pro Ser Leu Cys Ala Gly Pro Gly Asp Trp Lys Lys  
                             115                            120                            125

Cys Gly Gln Arg Cys Ala  
   130

&lt;210&gt; 1280

&lt;211&gt; 52

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (4)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (25)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1280

Cys Ala Leu Xaa Phe Glu Phe Phe Phe Phe Phe Phe Leu Arg Trp  
 1 5 10 15

Ser Leu Gly Asn Lys Ala Arg Leu Xaa Gln Lys Lys Lys Lys Lys Lys  
 20 25 30

Lys Thr Ser Val Gly Lys Asn Met Glu Asn Trp Asn Pro Asp Thr Leu  
 35 40 45

Leu Val Gly Leu  
 50

&lt;210&gt; 1281

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1281

Met Arg Val Val Ser Gly Thr Leu Phe Ile His Phe Leu Val Leu Ile  
 1 5 10 15

Phe

&lt;210&gt; 1282

&lt;211&gt; 17

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1282

Met Arg Val Val Ser Gly Thr Leu Phe Ile His Phe Leu Val Leu Ile  
 1 5 10 15

Phe

&lt;210&gt; 1283

&lt;211&gt; 182

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1283

Met Ala Lys Arg Ser Arg Gly Pro Gly Arg Arg Cys Leu Leu Ala Leu  
 1 5 10 15

Val Leu Phe Cys Ala Trp Gly Thr Leu Ala Val Val Ala Gln Lys Pro  
 20 25 30

Gly Ala Gly Cys Pro Ser Arg Cys Leu Cys Phe Arg Thr Thr Val Arg  
                   35                                  40                                  45  
 Cys Met His Leu Leu Leu Glu Ala Val Pro Ala Val Ala Pro Gln Thr  
           50                                  55                                  60  
 Ser Ile Leu Asp Leu Arg Phe Asn Arg Ile Arg Glu Ile Gln Pro Gly  
   65                                  70                                  75                                  80  
 Ala Phe Arg Arg Leu Arg Asn Leu Asn Thr Leu Leu Leu Asn Asn Asn  
                                   85                                  90                                  95  
 Gln Ile Lys Arg Ile Pro Ser Gly Ala Phe Glu Asp Leu Glu Asn Leu  
                                   100                                  105                                  110  
 Lys Tyr Leu Tyr Leu His Phe Asn Gln Ile Glu Thr Leu Asp Pro Asp  
           115                                  120                                  125  
 Ser Phe Gln His Leu Pro Lys Leu Glu Arg Leu Phe Leu His Asn Asn  
   130                                  135                                  140  
 Arg Ile Thr His Leu Val Pro Gly Thr Phe Asn His Leu Glu Ser Met  
 145                                  150                                  155                                  160  
 Lys Arg Leu Arg Leu Asp Ser Asn Thr Leu His Cys Asp Cys Glu Ile  
                                   165                                  170                                  175  
 Leu Trp Leu Arg Ile Cys  
                                   180

&lt;210&gt; 1284

&lt;211&gt; 550

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1284

Ala Leu Pro Gln Gln Ala Ala Val Ala Gly Ile Val Gln Arg Ser Gly  
   1                                  5                                  10                                  15  
 Lys Pro Leu Leu Pro Phe Ala Thr Gly Pro Pro Thr Glu Cys Met Arg  
           20                                  25                                  30  
 Asp Glu Asn Glu Ser Pro Ile Pro Cys Phe Leu Ala Gly Asp His Arg  
           35                                  40                                  45  
 Ala Asn Glu Gln Leu Gly Leu Thr Ser Met His Thr Leu Trp Phe Arg  
           50                                  55                                  60  
 Glu His Asn Arg Ile Ala Thr Glu Leu Leu Lys Leu Asn Pro His Trp  
   65                                  70                                  75                                  80  
 Asp Gly Asp Thr Ile Tyr Tyr Glu Thr Arg Lys Ile Val Gly Ala Glu  
           85                                  90                                  95  
 Ile Gln His Ile Thr Tyr Gln His Trp Leu Pro Lys Ile Leu Gly Glu  
           100                                  105                                  110  
 Val Gly Met Arg Thr Leu Gly Glu Tyr His Gly Tyr Asp Pro Gly Ile

115					120					125					
Asn	Ala	Gly	Ile	Phe	Asn	Ala	Phe	Ala	Thr	Ala	Ala	Phe	Arg	Phe	Gly
130					135					140					
His	Thr	Leu	Val	Asn	Pro	Leu	Leu	Tyr	Arg	Leu	Asp	Glu	Asn	Phe	Gln
145					150					155					160
Pro	Ile	Ala	Gln	Asp	His	Leu	Pro	Leu	His	Lys	Ala	Phe	Phe	Ser	Pro
				165					170					175	
Phe	Arg	Ile	Val	Asn	Glu	Gly	Gly	Ile	Asp	Pro	Leu	Leu	Arg	Gly	Leu
			180					185					190		
Phe	Gly	Val	Ala	Gly	Lys	Met	Arg	Val	Pro	Ser	Gln	Leu	Leu	Asn	Thr
	195					200					205				
Glu	Leu	Thr	Glu	Arg	Leu	Phe	Ser	Met	Ala	His	Thr	Val	Ala	Leu	Asp
	210					215					220				
Leu	Ala	Ala	Ile	Asn	Ile	Gln	Arg	Gly	Arg	Asp	His	Gly	Ile	Pro	Pro
225					230					235					240
Tyr	His	Asp	Tyr	Arg	Val	Tyr	Cys	Asn	Leu	Ser	Ala	Ala	His	Thr	Phe
				245					250					255	
Glu	Asp	Leu	Lys	Asn	Glu	Ile	Lys	Asn	Pro	Glu	Ile	Arg	Glu	Lys	Leu
			260					265					270		
Lys	Arg	Leu	Tyr	Gly	Ser	Thr	Leu	Asn	Ile	Asp	Leu	Phe	Pro	Ala	Leu
			275					280					285		
Val	Val	Glu	Asp	Leu	Val	Pro	Gly	Ser	Arg	Leu	Gly	Pro	Thr	Leu	Met
	290					295					300				
Cys	Leu	Leu	Ser	Thr	Gln	Phe	Lys	Arg	Leu	Arg	Asp	Gly	Asp	Arg	Leu
305					310					315					320
Trp	Tyr	Glu	Asn	Pro	Gly	Val	Phe	Ser	Pro	Ala	Gln	Leu	Thr	Gln	Ile
				325					330					335	
Lys	Gln	Thr	Ser	Leu	Ala	Arg	Ile	Leu	Cys	Asp	Asn	Ala	Asp	Asn	Ile
			340					345					350		
Thr	Arg	Val	Gln	Ser	Asp	Val	Phe	Arg	Val	Ala	Glu	Phe	Pro	His	Gly
		355					360					365			
Tyr	Gly	Ser	Cys	Asp	Glu	Ile	Pro	Arg	Val	Asp	Leu	Arg	Val	Trp	Gln
	370					375					380				
Asp	Cys	Cys	Glu	Asp	Cys	Arg	Thr	Arg	Gly	Gln	Phe	Asn	Ala	Phe	Ser
385					390					395					400
Tyr	His	Phe	Arg	Gly	Arg	Arg	Ser	Leu	Glu	Phe	Ser	Tyr	Gln	Glu	Asp
				405					410					415	
Lys	Pro	Thr	Lys	Lys	Thr	Arg	Pro	Arg	Lys	Ile	Pro	Ser	Val	Gly	Arg
			420					425					430		
Gln	Gly	Glu	His	Leu	Ser	Asn	Ser	Thr	Ser	Ala	Phe	Ser	Thr	Arg	Ser

435                      440                      445  
 Asp Ala Ser Gly Thr Asn Asp Phe Arg Glu Phe Val Leu Glu Met Gln  
 450                      455                      460  
 Lys Thr Ile Thr Asp Leu Arg Thr Gln Ile Lys Lys Leu Glu Ser Arg  
 465                      470                      475                      480  
 Leu Ser Thr Thr Glu Cys Val Asp Ala Gly Gly Glu Ser His Ala Asn  
 485                      490                      495  
 Asn Thr Lys Trp Lys Lys Asp Ala Cys Thr Ile Cys Glu Cys Lys Asp  
 500                      505                      510  
 Gly Gln Val Thr Cys Phe Val Glu Ala Cys Pro Pro Ala Thr Cys Ala  
 515                      520                      525  
 Val Pro Val Asn Ile Pro Gly Ala Cys Cys Pro Val Cys Leu Gln Lys  
 530                      535                      540  
 Arg Ala Glu Glu Lys Pro  
 545                      550

&lt;210&gt; 1285

&lt;211&gt; 210

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (139)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (187)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1285

Met Glu Ala Pro Gly Pro Arg Ala Leu Arg Thr Ala Leu Cys Gly Gly  
 1                      5                      10                      15

Cys Cys Cys Leu Leu Leu Cys Ala Gln Leu Ala Val Ala Gly Lys Gly  
 20                      25                      30

Ala Arg Gly Phe Gly Arg Gly Ala Leu Ile Arg Leu Asn Ile Trp Pro  
 35                      40                      45

Ala Val Gln Gly Ala Cys Lys Gln Leu Glu Val Cys Glu His Cys Val  
 50                      55                      60

Glu Gly Asp Arg Ala Arg Asn Leu Ser Ser Cys Met Trp Glu Gln Cys  
 65                      70                      75                      80

Arg Pro Glu Glu Pro Gly His Cys Val Ala Gln Ser Glu Val Val Lys  
 85                      90                      95

Glu Gly Cys Ser Ile Tyr Asn Arg Ser Glu Ala Cys Pro Ala Ala His

100 105 110  
 His His Pro Thr Tyr Glu Pro Lys Thr Val Thr Thr Gly Ser Pro Pro  
 115 120 125  
 Val Pro Glu Ala His Ser Pro Gly Phe Asp Xaa Ala Ser Phe Ile Gly  
 130 135 140  
 Gly Val Val Leu Val Leu Ser Leu Gln Ala Val Ala Phe Phe Val Leu  
 145 150 155 160  
 Thr Ser Ser Arg Pro Arg Thr Ala Pro Thr Arg Arg Cys Glu Tyr Leu  
 165 170 175  
 Ala Ser Ser Lys Tyr Leu Ser Pro Ser Ser Xaa Leu Val Pro Ala His  
 180 185 190  
 Val Pro Phe Ser Thr Gln Gly Ala Val Phe Ser Thr Gly Lys Pro Ser  
 195 200 205  
 Gly Arg  
 210

<210> 1286  
 <211> 173  
 <212> PRT  
 <213> Homo sapiens

<400> 1286

Met Glu Ala Pro Gly Pro Arg Ala Leu Arg Thr Ala Leu Cys Gly Gly  
 1 5 10 15  
 Cys Cys Cys Leu Leu Leu Cys Ala Gln Leu Ala Val Ala Gly Lys Gly  
 20 25 30  
 Ala Arg Gly Phe Gly Arg Gly Ala Leu Ile Arg Leu Asn Ile Trp Pro  
 35 40 45  
 Ala Val Gln Gly Ala Cys Lys Gln Leu Glu Val Cys Glu His Cys Val  
 50 55 60  
 Glu Gly Asp Arg Ala Arg Asn Leu Ser Ser Cys Met Trp Glu Gln Cys  
 65 70 75 80  
 Arg Pro Glu Glu Pro Gly His Cys Val Ala Gln Ser Glu Val Val Lys  
 85 90 95  
 Glu Gly Cys Ser Ile Tyr Asn Arg Ser Glu Ala Cys Pro Ala Ala His  
 100 105 110  
 His His Pro Thr Tyr Glu Pro Lys Thr Val Thr Thr Gly Ser Pro Pro  
 115 120 125  
 Val Pro Glu Ala His Ser Pro Gly Phe Asp Gly Ala Ser Phe Ile Gly  
 130 135 140  
 Gly Val Val Leu Val Leu Ser Leu Gln Ala Val Ala Phe Phe Val Leu  
 145 150 155 160

His Phe Leu Lys Ala Lys Asp Ser Thr Tyr Gln Thr Leu  
 165 170

<210> 1287

<211> 148

<212> PRT

<213> Homo sapiens

<400> 1287

Met Thr Trp Lys Ile Lys Leu Arg Ser Ala Val Tyr Leu Ser Asp Ala  
 1 5 10 15

Thr Val Thr Thr Leu Gly Asn Leu Val Pro Phe Thr Leu Thr Leu Leu  
 20 25 30

Cys Phe Leu Leu Leu Ile Cys Ser Leu Cys Lys His Leu Lys Lys Met  
 35 40 45

Gln Leu His Gly Lys Gly Ser Gln Asp Pro Ser Thr Lys Val His Ile  
 50 55 60

Lys Val Leu Gln Thr Val Ile Phe Phe Leu Leu Leu Cys Ala Ile Tyr  
 65 70 75 80

Phe Leu Ser Ile Met Ile Ser-Val Trp Ser Phe Gly Ser Leu Glu Asn  
 85 90 95

Lys Pro Val Phe Met Phe Cys Lys Ala Ile Arg Phe Ser Tyr Pro Ser  
 100 105 110

Ile His Pro Phe Ile Leu Ile Trp Gly Asn Lys Lys Leu Lys Gln Thr  
 115 120 125

Phe Leu Ser Val Leu Arg Gln Val Arg Tyr Trp Val Lys Gly Glu Lys  
 130 135 140

Pro Ser Ser Pro  
 145

<210> 1288

<211> 55

<212> PRT

<213> Homo sapiens

<400> 1288

Asn Glu Arg Val Leu Thr Tyr Ser Leu Ile Gly Ser Ser Ile Ile Arg  
 1 5 10 15

Lys Lys Cys Thr Val Leu Phe Thr Ala Lys Phe Tyr Leu Thr Val Leu  
 20 25 30

Ile Leu Gly Val Met Lys Phe Lys Gln Cys Asp Leu Asn Leu Lys Lys  
 35 40 45

Lys Lys Lys Lys Gly Arg Pro



50

55

&lt;210&gt; 1289

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (200)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1289

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Met Arg Leu Pro Gly Val Pro Leu Ala Arg Pro Ala Leu Leu Leu Leu
 1           5           10           15

Leu Pro Leu Leu Ala Pro Leu Leu Gly Thr Gly Ala Pro Ala Glu Leu
      20           25           30

Arg Val Arg Val Arg Leu Pro Asp Gly Gln Val Thr Glu Glu Ser Leu
      35           40           45

Gln Ala Asp Ser Asp Ala Asp Ser Ile Ser Leu Glu Leu Arg Lys Pro
      50           55           60

Asp Gly Thr Leu Val Ser Phe Thr Ala Asp Phe Lys Lys Asp Val Lys
      65           70           75           80

Val Phe Arg Ala Leu Ile Leu Gly Glu Leu Glu Lys Gly Gln Ser Gln
      85           90           95

Phe Gln Ala Leu Cys Phe Val Thr Gln Leu Gln His Asn Glu Ile Ile
      100          105          110

Pro Ser Glu Ala Met Ala Lys Leu Arg Gln Lys Asn Pro Arg Ala Val
      115          120          125

Arg Gln Ala Glu Glu Val Arg Gly Leu Glu His Leu His Met Asp Val
      130          135          140

Ala Val Asn Phe Ser Gln Gly Ala Leu Leu Ser Pro His Leu His Asn
      145          150          155          160

Val Cys Ala Glu Ala Val Asp Ala Ile Tyr Thr Arg Gln Glu Asp Val
      165          170          175

Arg Phe Trp Leu Glu Gln Gly Val Asp Ser Ser Val Phe Glu Ala Leu
      180          185          190

Pro Lys Ala Ser Glu Gln Ala Xaa Leu Pro Arg Cys Arg Gln Val Gly
      195          200          205

Asp Arg Gly Lys Pro Cys Val Cys His Tyr Gly Leu Ser Leu Ala Trp
      210          215          220

Tyr Pro Cys Met Leu Lys Tyr Cys His Ser Arg Asp Arg Pro Thr Pro
      225          230          235          240

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Asp Arg Gly Lys Pro Cys Val Cys Xaa Tyr Gly Leu Ser Leu Ala Trp  
 210 215 220  
 Tyr Pro Cys Met Leu Lys Tyr Cys His Ser Arg Asp Arg Pro Thr Pro  
 225 230 235 240  
 Tyr Lys Cys Gly Ile Arg Ser Cys Gln Lys Ser Tyr Ser Phe Asp Phe  
 245 250 255  
 Tyr Val Pro Gln Arg Gln Leu Cys Leu Trp Asp Glu Asp Pro Tyr Pro  
 260 265 270

Gly

<210> 1291

<211> 934

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (225)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (596)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (852)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1291

Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile Val Leu Leu  
 1 5 10 15

Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile Ser Arg Gly  
 20 25 30

Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu Ser Ser Cys  
 35 40 45

Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser  
 50 55 60

Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile Val Asp Ile  
 65 70 75 80

Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val Gly Leu Leu  
 85 90 95

Gln Tyr Gly Ser Thr Val Lys Asn Glu Phe Ser Leu Lys Thr Phe Lys  
 100 105 110

Arg Lys Ser Glu Val Glu Arg Ala Val Lys Arg Met Arg His Leu Ser  
 115 120 125  
 Thr Gly Thr Met Thr Gly Leu Ala Ile Gln Tyr Ala Leu Asn Ile Ala  
 130 135 140  
 Phe Ser Glu Ala Glu Gly Ala Arg Pro Leu Arg Glu Asn Val Pro Arg  
 145 150 155 160  
 Val Ile Met Ile Val Thr Asp Gly Arg Pro Gln Asp Ser Val Ala Glu  
 165 170 175  
 Val Ala Ala Lys Ala Arg Asp Thr Gly Ile Leu Ile Phe Ala Ile Gly  
 180 185 190  
 Val Gly Gln Val Asp Phe Asn Thr Leu Lys Ser Ile Gly Ser Glu Pro  
 195 200 205  
 His Glu Asp His Val Phe Leu Val Ala Asn Phe Ser Gln Ile Glu Thr  
 210 215 220  
 Xaa Thr Ser Val Phe Gln Lys Lys Leu Cys Thr Ala His Met Cys Ser  
 225 230 235 240  
 Thr Leu Glu His Asn Cys Ala His Phe Cys Ile Asn Ile Pro Gly Ser  
 245 250 255  
 Tyr Val Cys Arg Cys Lys Gln Gly Tyr Ile Leu Asn Ser Asp Gln Thr  
 260 265 270  
 Thr Cys Arg Ile Gln Asp Leu Cys Ala Met Glu Asp His Asn Cys Glu  
 275 280 285  
 Gln Leu Cys Val Asn Val Pro Gly Ser Phe Val Cys Gln Cys Tyr Ser  
 290 295 300  
 Gly Tyr Ala Leu Ala Glu Asp Gly Lys Arg Cys Val Ala Val Asp Tyr  
 305 310 315 320  
 Cys Ala Ser Glu Asn His Gly Cys Glu His Glu Cys Val Asn Ala Asp  
 325 330 335  
 Gly Ser Tyr Leu Cys Gln Cys His Glu Gly Phe Ala Leu Asn Pro Asp  
 340 345 350  
 Glu Lys Thr Cys Thr Lys Ile Asp Tyr Cys Ala Ser Ser Asn His Gly  
 355 360 365  
 Cys Gln His Glu Cys Val Asn Thr Asp Asp Ser Tyr Ser Cys His Cys  
 370 375 380  
 Leu Lys Gly Phe Thr Leu Asn Pro Asp Lys Lys Thr Cys Arg Arg Ile  
 385 390 395 400  
 Asn Tyr Cys Ala Leu Asn Lys Pro Gly Cys Glu His Glu Cys Val Asn  
 405 410 415  
 Met Glu Glu Ser Tyr Tyr Cys Arg Cys His Arg Gly Tyr Thr Leu Asp  
 420 425 430

Pro Asn Gly Lys Thr Cys Ser Arg Val Asp His Cys Ala Gln Gln Asp  
 435 440 445  
 His Gly Cys Glu Gln Leu Cys Leu Asn Thr Glu Asp Ser Phe Val Cys  
 450 455 460  
 Gln Cys Ser Glu Gly Phe Leu Ile Asn Glu Asp Leu Lys Thr Cys Ser  
 465 470 475 480  
 Arg Val Asp Tyr Cys Leu Leu Ser Asp His Gly Cys Glu Tyr Ser Cys  
 485 490 495  
 Val Asn Met Asp Arg Ser Phe Ala Cys Gln Cys Pro Glu Gly His Val  
 500 505 510  
 Leu Arg Ser Asp Gly Lys Thr Cys Ala Lys Leu Asp Ser Cys Ala Leu  
 515 520 525  
 Gly Asp His Gly Cys Glu His Ser Cys Val Ser Ser Glu Asp Ser Phe  
 530 535 540  
 Val Cys Gln Cys Phe Glu Gly Tyr Ile Leu Arg Glu Asp Gly Lys Thr  
 545 550 555 560  
 Cys Arg Arg Lys Asp Val Cys Gln Ala Ile Asp His Gly Cys Glu His  
 565 570 575  
 Ile Cys Val Asn Ser Asp Asp Ser Tyr Thr Cys Glu Cys Leu Glu Gly  
 580 585 590  
 Phe Arg Leu Xaa Glu Asp Gly Lys Arg Cys Arg Arg Lys Asp Val Cys  
 595 600 605  
 Lys Ser Thr His His Gly Cys Glu His Ile Cys Val Asn Asn Gly Asn  
 610 615 620  
 Ser Tyr Ile Cys Lys Cys Ser Glu Gly Phe Val Leu Ala Glu Asp Gly  
 625 630 635 640  
 Arg Arg Cys Lys Lys Cys Thr Glu Gly Pro Ile Asp Leu Val Phe Val  
 645 650 655  
 Ile Asp Gly Ser Lys Ser Leu Gly Glu Glu Asn Phe Glu Val Val Lys  
 660 665 670  
 Gln Phe Val Thr Gly Ile Ile Asp Ser Leu Thr Ile Ser Pro Lys Ala  
 675 680 685  
 Ala Arg Val Gly Leu Leu Gln Tyr Ser Thr Gln Val His Thr Glu Phe  
 690 695 700  
 Thr Leu Arg Asn Phe Asn Ser Ala Lys Asp Met Lys Lys Ala Val Ala  
 705 710 715 720  
 His Met Lys Tyr Met Gly Lys Gly Ser Met Thr Gly Leu Ala Leu Lys  
 725 730 735  
 His Met Phe Glu Arg Ser Phe Thr Gln Gly Glu Gly Ala Arg Pro Leu  
 740 745 750

Ser Thr Arg Val Pro Arg Ala Ala Ile Val Phe Thr Asp Gly Arg Ala  
 755 760 765  
 Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Lys Ala Asn Gly Ile  
 770 775 780  
 Thr Met Tyr Ala Val Gly Val Gly Lys Ala Ile Glu Glu Glu Leu Gln  
 785 790 795 800  
 Glu Ile Ala Ser Glu Pro Thr Asn Lys His Leu Phe Tyr Ala Glu Asp  
 805 810 815  
 Phe Ser Thr Met Asp Glu Ile Ser Glu Lys Leu Lys Lys Gly Ile Cys  
 820 825 830  
 Glu Ala Leu Glu Asp Ser Asp Gly Arg Gln Asp Ser Pro Ala Gly Glu  
 835 840 845  
 Leu Pro Lys Xaa Val Gln Gln Pro Thr Val Gln His Arg Tyr Leu Phe  
 850 855 860  
 Glu Glu Asp Asn Leu Leu Arg Ser Thr Gln Lys Leu Ser His Ser Thr  
 865 870 875 880  
 Lys Pro Ser Gly Ser Pro Leu Glu Glu Lys His Asp Gln Cys Lys Cys  
 885 890 895  
 Glu Asn Leu Ile Met Phe Gln Asn Leu Ala Asn Glu Glu Val Arg Lys  
 900 905 910  
 Leu Thr Gln Arg Leu Glu Glu Met Thr Gln Arg Met Glu Ala Leu Glu  
 915 920 925  
 Asn Arg Leu Arg Tyr Arg  
 930

<210> 1292  
 <211> 794  
 <212> PRT  
 <213> Homo sapiens

<400> 1292  
 Met Leu Ala Gly Cys Phe Leu Leu Ile Leu Gly Gln Ile Val Leu Leu  
 1 5 10 15  
 Pro Ala Glu Ala Arg Glu Arg Ser Arg Gly Arg Ser Ile Ser Arg Gly  
 20 25 30  
 Arg His Ala Arg Thr His Pro Gln Thr Ala Leu Leu Glu Ser Ser Cys  
 35 40 45  
 Glu Asn Lys Arg Ala Asp Leu Val Phe Ile Ile Asp Ser Ser Arg Ser  
 50 55 60  
 Val Asn Thr His Asp Tyr Ala Lys Val Lys Glu Phe Ile Val Asp Ile  
 65 70 75 80  
 Leu Gln Phe Leu Asp Ile Gly Pro Asp Val Thr Arg Val Gly Leu Leu

[illegible]

				405					410							415			
Met	Glu	Glu	Ser	Tyr	Tyr	Cys	Arg	Cys	His	Arg	Gly	Tyr	Thr	Leu	Asp				
			420					425					430						
Pro	Asn	Gly	Lys	Thr	Cys	Ser	Arg	Val	Asp	His	Cys	Ala	Gln	Gln	Asp				
		435					440					445							
His	Gly	Cys	Glu	Gln	Leu	Cys	Leu	Asn	Thr	Glu	Asp	Ser	Phe	Val	Cys				
	450					455					460								
Gln	Cys	Ser	Glu	Gly	Phe	Leu	Ile	Asn	Glu	Asp	Leu	Lys	Thr	Cys	Ser				
465					470					475								480	
Arg	Val	Asp	Tyr	Cys	Leu	Leu	Ser	Asp	His	Gly	Cys	Glu	Tyr	Ser	Cys				
				485					490						495				
Val	Asn	Met	Asp	Arg	Ser	Phe	Ala	Cys	Gln	Cys	Pro	Glu	Gly	His	Val				
			500					505					510						
Leu	Arg	Ser	Asp	Gly	Lys	Thr	Cys	Ala	Lys	Leu	Asp	Ser	Cys	Ala	Leu				
		515					520					525							
Gly	Asp	His	Gly	Cys	Glu	His	Ser	Cys	Val	Ser	Ser	Glu	Asp	Ser	Phe				
	530					535					540								
Val	Cys	Gln	Cys	Phe	Glu	Gly	Tyr	Ile	Leu	Arg	Glu	Asp	Gly	Lys	Thr				
545					550					555					560				
Cys	Arg	Arg	Lys	Asp	Val	Cys	Gln	Ala	Ile	Asp	His	Gly	Cys	Glu	His				
				565					570					575					
Ile	Cys	Val	Asn	Ser	Asp	Asp	Ser	Tyr	Thr	Cys	Glu	Cys	Leu	Glu	Gly				
			580					585					590						
Phe	Arg	Leu	Ala	Glu	Asp	Gly	Lys	Arg	Cys	Arg	Arg	Lys	Asp	Val	Cys				
		595					600					605							
Lys	Ser	Thr	His	His	Gly	Cys	Glu	His	Ile	Cys	Val	Asn	Asn	Gly	Asn				
	610					615					620								
Ser	Tyr	Ile	Cys	Lys	Cys	Ser	Glu	Gly	Phe	Val	Leu	Ala	Glu	Asp	Gly				
625					630					635					640				
Arg	Arg	Cys	Lys	Lys	Cys	Thr	Glu	Gly	Pro	Ile	Asp	Leu	Val	Phe	Val				
				645					650					655					
Ile	Asp	Gly	Ser	Lys	Ser	Leu	Gly	Glu	Glu	Asn	Phe	Glu	Val	Val	Lys				
			660				665						670						
Gln	Phe	Val	Thr	Gly	Ile	Ile	Asp	Ser	Leu	Thr	Ile	Ser	Pro	Lys	Ala				
		675					680					685							
Ala	Arg	Val	Gly	Leu	Leu	Gln	Tyr	Ser	Thr	Gln	Val	His	Thr	Glu	Phe				
		690				695					7								



725 730 735

His Met Phe Glu Arg Ser Phe Thr Gln Gly Glu Gly Ala Arg Pro Leu  
740 745 750

Ser Thr Arg Val Pro Arg Ala Ala Ile Val Phe Thr Asp Gly Arg Ala  
755 760 765

Gln Asp Asp Val Ser Glu Trp Ala Ser Lys Ala Arg Pro Trp Tyr His  
770 775 780

Tyr Val Cys Cys Trp Gly Arg Lys Ser His  
785 790

<210> 1293  
<211> 39  
<212> PRT  
<213> Homo sapiens

<400> 1293

Met Arg Arg Pro Ala Ala Val Pro Leu Leu Leu Leu Cys Phe Gly  
1 5 10 15

Ser Gln Arg Ala Lys Ala Ala Thr Ala Cys Gly Arg Pro Arg Met Leu  
20 25 30

Asn Arg Met Val Gly Gly Gln  
35

<210> 1294  
<211> 290  
<212> PRT  
<213> Homo sapiens

<400> 1294

Met Arg Arg Pro Ala Ala Val Pro Leu Leu Leu Leu Cys Phe Gly  
1 5 10 15

Ser Gln Arg Ala Lys Ala Ala Thr Ala Cys Gly Arg Pro Arg Met Leu  
20 25 30

Asn Arg Met Val Gly Gly Gln Asp Thr Gln Glu Gly Glu Trp Pro Trp  
35 40 45

Gln Val Ser Ile Gln Arg Asn Gly Ser His Phe Cys Gly Gly Ser Leu  
50 55 60

Ile Ala Glu Gln Trp Val Leu Thr Ala Ala His Cys Phe Arg Asn Thr  
65 70 75 80

Ser Glu Thr Ser Leu Tyr Gln Val Leu Leu Gly Ala Arg Gln Leu Val  
85 90 95

Gln Pro Gly Pro His Ala Met Tyr Ala Arg Val Arg Gln Val Glu Ser  
100 105 110

Asn Pro Leu Tyr Gln Gly Thr Ala Ser Ser Ala Asp Val Ala Leu Val  
     115                                    120                                    125  
 Glu Leu Glu Ala Pro Val Pro Phe Thr Asn Tyr Ile Leu Pro Val Cys  
     130                                    135                                    140  
 Leu Pro Asp Pro Ser Val Ile Phe Glu Thr Gly Met Asn Cys Trp Val  
     145                                    150                                    155                                    160  
 Thr Gly Trp Gly Ser Pro Ser Glu Glu Asp Leu Leu Pro Glu Pro Arg  
                                     165                                    170                                    175  
 Ile Leu Gln Lys Leu Ala Val Pro Ile Ile Asp Thr Pro Lys Cys Asn  
                                     180                                    185                                    190  
 Leu Leu Tyr Ser Lys Asp Thr Glu Phe Gly Tyr Gln Pro Lys Thr Ile  
                                     195                                    200                                    205  
 Lys Asn Asp Met Leu Cys Ala Gly Phe Glu Glu Gly Lys Lys Asp Ala  
     210                                    215                                    220  
 Cys Lys Gly Asp Ser Gly Gly Pro Leu Val Cys Leu Val Gly Gln Ser  
     225                                    230                                    235                                    240  
 Trp Leu Gln Ala Gly Val Ile Ser Trp Gly Glu Gly Cys Ala Arg Gln  
                                     245                                    250                                    255  
 Asn Arg Pro Gly Val Tyr Ile Arg Val Thr Ala His His Asn Trp Ile  
                                     260                                    265                                    270  
 His Arg Ile Ile Pro Lys Leu Gln Phe Gln Pro Ala Arg Leu Gly Gly  
                                     275                                    280                                    285  
 Gln Lys  
     290

&lt;210&gt; 1295

&lt;211&gt; 144

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (77)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (122)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (141)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1295

Met Leu Leu Gly Val Gly Leu Val Val Leu Ala Leu Ile Ala Gly Trp

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<400> 1296
Thr Ser Arg Val Trp Cys Pro His Val Arg Arg Ash Arg Pro Ser Xaa
  1                               10                      15

Gln Thr Ala Glu Pro Cys Ala Val Asn Trp Lys Ala Cys Lys Ala Thr
      20                      25                      30

Val Gly Thr Ile Gly His Gly Cys Gly Pro Ala Ile Ala Leu Ala Val
      35                      40                      45

Ala Gly Ile Phe Val Leu Leu Cys Gly Val Gly Ile Ser Arg Val Gln
      50                      55                      60

Leu Leu Asp Ser Arg Ser Arg Xaa Ala Thr Ala Glu Ala Gln Gln Arg

```

65		70		75		80									
Asp	Ala	Lys	Arg	Gln	Glu	Gln	Glu	Ala	Lys	Arg	Ile	Asn	Asp	Ala	Asn
				85					90					95	
Gln	Ala	Ala	Ile	Leu	Arg	Leu	Met	Asn	Glu	Leu	Gln	Ser	Val	Ala	Glu
			100					105					110		
Gly	Asp	Leu	Thr	Gln	Glu	Ala	Thr	Val	Thr	Glu	Asp	Ile	Thr	Gly	Ala
		115					120					125			
Ile	Ala	Asp	Ser	Val	Asn	Tyr	Thr	Val	Glu	Glu	Ser	Ala	Ser	Trp	Trp
	130					135					140				
Ala	Thr	Cys	Arg	Thr	Pro	Arg	Pro	Gly	Trp	Pro	Arg	Pro	Pro	Arg	Arg
145					150					155					160
Trp	Thr	Ala	Pro	Leu	Arg	Asn	Cys	Trp	Arg	Leu	Arg	Pro	Ser	Ser	Cys
			165						170					175	
Val	Lys	Ser	Val	Lys	Arg	Ala	Val	Arg	Cys	Ser					
			180					185							

&lt;210&gt; 1297

&lt;211&gt; 346

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1297

Met	Leu	Leu	Gly	Val	Gly	Leu	Val	Val	Leu	Ala	Leu	Ile	Ala	Gly	Trp
1				5					10					15	
Val	Leu	Gln	Gln	Ala	Asn	Arg	Ser	Ala	Gln	Gln	Leu	Thr	Ala	Thr	Gly
			20					25					30		
Gln	Ser	Leu	Met	Gln	Ser	Gln	Arg	Leu	Ala	Lys	Ser	Val	Ser	Gln	Ala
		35					40					45			
Leu	Val	Gly	Ser	Pro	Gln	Ala	Phe	Pro	Asp	Val	Val	Glu	Ser	Ser	Gly
	50					55					60				
Val	Leu	Ala	Arg	Asn	Val	Arg	Ala	Leu	Asn	Gly	Gly	Asp	Asn	Glu	Leu
	65				70					75				80	
Asp	Val	Gln	Ala	Leu	Gly	Glu	Pro	Phe	Arg	Pro	Glu	Leu	Asp	Ala	Ile
				85					90					95	
Thr	Pro	Leu	Val	Glu	Arg	Ala	Glu	Arg	Asn	Ala	Gly	Val	Val	Met	Gly
			100					105					110		
Gln	Gln	Lys	Ile	Leu	Thr	Gln	Val	Gly	Asp	Ala	Leu	Arg	Thr	Ile	Asn
		115					120					125			
Arg	Gln	Ser	Ser	Asp	Leu	Leu	Glu	Ile	Ala	Glu	Thr	Val	Ser	Ser	Leu
	130					135					140				
Lys	Leu	Gln	Gln	Asn	Ala	Pro	Ala	Ser	Glu	Ile	Ser	Ala	Ala	Gly	Gln
145					150					155					160

Leu Val Met Leu Thr Gln Arg Ile Gly Lys Ser Ala Asn Glu Phe Gln  
 165 170 175  
 Thr Thr Glu Gly Val Ser Pro Glu Ala Val Phe Leu Leu Gly Lys Asp  
 180 185 190  
 Leu Asn Ser Phe Lys Glu Ile Ala Arg Gly Met Leu Asp Gly Ser Ala  
 195 200 205  
 Asp Leu Arg Leu Ala Ala Thr Arg Asp Ala Gln Thr Arg Glu Gln Leu  
 210 215 220  
 Glu Ser Leu Ile Lys Leu Tyr Glu Gln Thr Arg Thr Gln Ala Gly Ala  
 225 230 235 240  
 Ile Leu Gly Asn Leu Gln Gly Leu Val Ser Ala Arg Glu Ala Gln Ser  
 245 250 255  
 Ala Ile Leu Ala Asp Ser Glu Pro Leu Arg Arg Gln Leu Glu Gly Leu  
 260 265 270  
 Gln Ser Lys Leu Ser Ala Gln Ser Gly Met Gly Ala Ala Ser Ser Leu  
 275 280 285  
 Arg Ser Pro Ser Pro Val Ser Ser Ser Cys Cys Ala Ala Trp Val Phe  
 290 295 300  
 Arg Ala Cys Ser Cys Trp Thr Ala Ala Ala Lys Pro Arg Pro Lys  
 305 310 315 320  
 His Ser Ser Val Met Pro Ser Ala Arg Asn Arg Lys Pro Ser Ala Ser  
 325 330 335  
 Thr Thr Pro Thr Arg Arg Pro Phe Cys Asp  
 340 345

&lt;210&gt; 1298

&lt;211&gt; 29

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1298

Met His Leu Val Gly Gly Thr Leu Leu Val Leu Ala Pro Arg Gly Ala  
 1 5 10 15

Val Leu Pro Leu Ser Ser Gln Ser Met Pro Phe Leu Gln  
 20 25

&lt;210&gt; 1299

&lt;211&gt; 29

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1299

Met His Leu Val Gly Gly Thr Leu Leu Val Leu Ala Pro Arg Gly Ala

1				5					10						15
Val	Leu	Pro	Leu	Ser	Ser	Gln	Ser	Met	Pro	Phe	Leu	Gln			
			20					25							
<210> 1300															
<211> 299															
<212> PRT															
<213> Homo sapiens															
<400> 1300															
Met	Gly	Thr	Lys	Ala	Gln	Val	Glu	Arg	Lys	Leu	Leu	Cys	Leu	Phe	Ile
1				5					10					15	
Leu	Ala	Ile	Leu	Leu	Cys	Ser	Leu	Ala	Leu	Gly	Ser	Val	Thr	Val	His
			20					25					30		
Ser	Ser	Glu	Pro	Glu	Val	Arg	Ile	Pro	Glu	Asn	Asn	Pro	Val	Lys	Leu
		35					40					45			
Ser	Cys	Ala	Tyr	Ser	Gly	Phe	Ser	Ser	Pro	Arg	Val	Glu	Trp	Lys	Phe
	50					55					60				
Asp	Gln	Gly	Asp	Thr	Thr	Arg	Leu	Val	Cys	Tyr	Asn	Asn	Lys	Ile	Thr
65					70					75					80
Ala	Ser	Tyr	Glu	Asp	Arg	Val	Thr	Phe	Leu	Pro	Thr	Gly	Ile	Thr	Phe
				85					90					95	
Lys	Ser	Val	Thr	Arg	Glu	Asp	Thr	Gly	Thr	Tyr	Thr	Cys	Met	Val	Ser
			100					105					110		
Glu	Glu	Gly	Gly	Asn	Ser	Tyr	Gly	Glu	Val	Lys	Val	Lys	Leu	Ile	Val
		115					120					125			
Leu	Val	Pro	Pro	Ser	Lys	Pro	Thr	Val	Asn	Ile	Pro	Ser	Ser	Ala	Thr
	130					135					140				
Ile	Gly	Asn	Arg	Ala	Val	Leu	Thr	Cys	Ser	Glu	Gln	Asp	Gly	Ser	Pro
145					150					155					160
Pro	Ser	Glu	Tyr	Thr	Trp	Phe	Lys	Asp	Gly	Ile	Val	Met	Pro	Thr	Asn
				165					170					175	
Pro	Lys	Ser	Thr	Arg	Ala	Phe	Ser	Asn	Ser	Ser	Tyr	Val	Leu	Asn	Pro
			180					185					190		
Thr	Thr	Gly	Glu	Leu	Val	Phe	Asp	Pro	Leu	Ser	Ala	Ser	Asp	Thr	Gly
		195					200					205			
Glu	Tyr	Ser	Cys	Glu	Ala	Arg	Asn	Gly	Tyr	Gly	Thr	Pro	Met	Thr	Ser
	210					215					220				
Asn	Ala	Val	Arg	Met	Glu	Ala	Val	Glu	Arg	Asn	Val	Gly	Val	Ile	Val
225					230					235					240
Ala	Ala	Val	Leu	Val	Thr	Leu	Ile	Leu	Leu	Gly	Ile	Leu	Val	Phe	Gly
				245					250					255	

Ile Trp Phe Ala Tyr Ser Arg Gly His Phe Asp Arg Thr Lys Lys Gly  
260 265 270

Thr Ser Ser Lys Lys Val Ile Tyr Ser Gln Pro Ser Ala Arg Ser Glu  
275 280 285

Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val  
290 295

<210> 1301

<211> 299

<212> PRT

<213> Homo sapiens

<400> 1301

Met Gly Thr Lys Ala Gln Val Glu Arg Lys Leu Leu Cys Leu Phe Ile  
1 5 10 15

Leu Ala Ile Leu Leu Cys Ser Leu Ala Leu Gly Ser Val Thr Val His  
20 25 30

Ser Ser Glu Pro Glu Val Arg Ile Pro Glu Asn Asn Pro Val Lys Leu  
35 40 45

Ser Cys Ala Tyr Ser Gly Phe Ser Ser Pro Arg Val Glu Trp Lys Phe  
50 55 60

Asp Gln Gly Asp Thr Thr Arg Leu Val Cys Tyr Asn Asn Lys Ile Thr  
65 70 75 80

Ala Ser Tyr Glu Asp Arg Val Thr Phe Leu Pro Thr Gly Ile Thr Phe  
85 90 95

Lys Ser Val Thr Arg Glu Asp Thr Gly Thr Tyr Thr Cys Met Val Ser  
100 105 110

Glu Glu Gly Gly Asn Ser Tyr Gly Glu Val Lys Val Lys Leu Ile Val  
115 120 125

Leu Val Pro Pro Ser Lys Pro Thr Val Asn Ile Pro Ser Ser Ala Thr  
130 135 140

Ile Gly Asn Arg Ala Val Leu Thr Cys Ser Glu Gln Asp Gly Ser Pro  
145 150 155 160

Pro Ser Glu Tyr Thr Trp Phe Lys Asp Gly Ile Val Met Pro Thr Asn  
165 170 175

Pro Lys Ser Thr Arg Ala Phe Ser Asn Ser Ser Tyr Val Leu Asn Pro  
180 185 190

Thr Thr Gly Glu Leu Val Phe Asp Pro Leu Ser Ala Ser Asp Thr Gly  
195 200 205

Glu Tyr Ser Cys Glu Ala Arg Asn Gly Tyr Gly Thr Pro Met Thr Ser  
210 215 220

Asn Ala Val Arg Met Glu Ala Val Glu Arg Asn Val Gly Val Ile Val  
 225 230 235 240  
 Ala Ala Val Leu Val Thr Leu Ile Leu Leu Gly Ile Leu Val Phe Gly  
 245 250 255  
 Ile Trp Phe Ala Tyr Ser Arg Gly His Phe Asp Arg Thr Lys Lys Gly  
 260 265 270  
 Thr Ser Ser Lys Lys Val Ile Tyr Ser Gln Pro Ser Ala Arg Ser Glu  
 275 280 285  
 Gly Glu Phe Lys Gln Thr Ser Ser Phe Leu Val  
 290 295

&lt;210&gt; 1302

&lt;211&gt; 136

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1302

Ala Arg Ala Lys Pro Glu Arg Pro Ala Gly Trp Ala Glu Ser Val Leu  
 1 5 10 15  
 Glu Glu Asp Ala Ser Glu Leu Glu Pro Ala Phe Ser Arg Thr Val Gly  
 20 25 30  
 Thr Ile Gln His Cys Leu His Leu Thr Ser Val Tyr Thr His Phe Leu  
 35 40 45  
 Pro Gln Arg Gly Arg Pro Glu Val Thr Thr Met Pro Leu Gly Leu Gly  
 50 55 60  
 Met Thr Val Asp Tyr Ile Phe Phe Ser Ala Glu Ser Cys Glu Asn Gly  
 65 70 75 80  
 Asn Arg Thr Asp His Arg Leu Tyr Arg Asp Gly Thr Leu Lys Leu Leu  
 85 90 95  
 Gly Arg Leu Ser Leu Leu Ser Glu Glu Ile Leu Trp Ala Ala Asn Gly  
 100 105 110  
 Leu Pro Asn Pro Phe Cys Ser Ser Asp His Leu Cys Leu Leu Ala Ser  
 115 120 125  
 Phe Gly Met Glu Val Thr Ala Pro  
 130 135

&lt;210&gt; 1303

&lt;211&gt; 100

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (22)



<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (83)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (92)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (95)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1303

Met Ile Ala Ser Cys Leu Cys Tyr Leu Leu Leu Pro Ala Thr Arg Leu  
1 5 10 15

Phe Arg Ala Leu Ser Xaa Ala Phe Phe Thr Cys Arg Lys Asn Val Leu  
20 25 30

Leu Ala Asn Ser Ser Ser Pro Gln Val Glu Gly Asp Phe Ala Met Ala  
35 40 45

Pro Arg Gly Pro Glu Gln Glu Glu Cys Glu Gly Leu Leu Gln Gln Trp  
50 55 60

Arg Glu Glu Gly Leu Ser Gln Val Leu Ser Thr Ala Ser Glu Gly Pro  
65 70 75 80

Leu Ile Xaa Lys Gly Leu Ala Gln Ser Ser Leu Xaa Leu Leu Xaa Asp  
85 90 95

Asn Pro Gly Glu  
100

<210> 1304

<211> 670

<212> PRT

<213> Homo sapiens

<400> 1304

Met Ile Ala Ser Cys Leu Cys Tyr Leu Leu Leu Pro Ala Thr Arg Leu  
1 5 10 15

Phe Arg Ala Leu Ser Asp Ala Phe Phe Thr Cys Arg Lys Asn Val Leu  
20 25 30

Leu Ala Asn Ser Ser Ser Pro Gln Val Glu Gly Asp Phe Ala Met Ala  
35 40 45

Pro Arg Gly Pro Glu Gln Glu Glu Cys Glu Gly Leu Leu Gln Gln Trp  
50 55 60

Arg Glu Glu Gly Leu Ser Gln Val Leu Ser Thr Ala Ser Glu Gly Pro

65	70	75	80
Leu Ile Asp Lys Gly Leu Ala Gln Ser Ser Leu Ala Leu Leu Met Asp	85	90	95
Asn Pro Gly Glu Glu Asn Ala Ala Ser Glu Asp Arg Trp Ser Ser Arg	100	105	110
Gln Leu Ser Asp Leu Arg Ala Ala Glu Asn Leu Asp Glu Pro Phe Pro	115	120	125
Glu Met Leu Gly Glu Glu Pro Leu Leu Glu Val Glu Gly Val Glu Gly	130	135	140
Ser Met Trp Ala Ala Ile Pro Met Gln Ser Glu Pro Gln Tyr Ala Asp	145	150	155
Cys Ala Ala Leu Pro Val Gly Ala Leu Ala Thr Glu Gln Trp Glu Glu	165	170	175
Asp Pro Ala Val Leu Ala Trp Ser Ile Ala Pro Glu Pro Val Pro Gln	180	185	190
Glu Glu Ala Ser Ile Trp Pro Phe Glu Gly Leu Gly Gln Leu Gln Pro	195	200	205
Pro Ala Val Glu Ile Pro Tyr His Glu Ile Leu Trp Arg Glu Trp Glu	210	215	220
Asp Phe Ser Thr Gln Pro Asp Ala Gln Gly Leu Lys Ala Gly Asp Gly	225	230	235
Pro Gln Phe Gln Phe Thr Leu Met Ser Tyr Asn Ile Leu Ala Gln Asp	245	250	255
Leu Met Gln Gln Ser Ser Glu Leu Tyr Leu His Cys His Pro Asp Ile	260	265	270
Leu Asn Trp Asn Tyr Arg Phe Val Asn Leu Met Gln Glu Phe Gln His	275	280	285
Trp Asp Pro Asp Ile Leu Cys Leu Gln Glu Val Gln Glu Asp His Tyr	290	295	300
Trp Glu Gln Leu Glu Pro Ser Leu Arg Met Met Gly Phe Thr Cys Phe	305	310	315
Tyr Lys Arg Arg Thr Gly Cys Lys Thr Asp Gly Cys Ala Val Cys Tyr	325	330	335
Lys Pro Thr Arg Phe Arg Leu Leu Cys Ala Ser Pro Val Glu Tyr Phe	340	345	350
Arg Pro Gly Leu Glu Leu Leu Asn Arg Asp Asn Val Gly Leu Val Leu	355	360	365
Leu Leu Gln Pro Leu Val Pro Glu Gly Leu Gly Gln Val Ser Val Ala	370	375	380
Pro Leu Cys Val Ala Asn Thr His Ile Leu Tyr Asn Pro Arg Arg Gly			

385		390		395		400
Asp Val Lys Leu	Ala Gln Met Ala Ile Leu Leu Ala Glu Val Asp Lys					
	405		410		415	
Val Ala Arg Leu	Ser Asp Gly Ser His Cys Pro Ile Ile Leu Cys Gly					
	420		425		430	
Asp Leu Asn Ser	Val Pro Asp Ser Pro Leu Tyr Asn Phe Ile Arg Asp					
	435		440		445	
Gly Glu Leu Gln	Tyr His Gly Met Pro Ala Trp Lys Val Ser Gly Gln					
	450		455		460	
Glu Asp Phe Ser	His Gln Leu Tyr Gln Arg Lys Leu Gln Ala Pro Leu					
	465		470		475	
Trp Pro Ser Ser	Leu Gly Ile Thr Asp Cys Cys Gln Tyr Val Thr Ser					
	485		490		495	
Cys His Pro Lys	Arg Ser Glu Arg Arg Lys Tyr Gly Arg Asp Phe Leu					
	500		505		510	
Leu Arg Phe Arg	Phe Cys Ser Ile Ala Cys Gln Arg Pro Val Gly Leu					
	515		520		525	
Val Leu Met Glu	Gly Val Thr Asp Thr Lys Pro Glu Arg Pro Ala Gly					
	530		535		540	
Trp Ala Glu Ser	Val Leu Glu Glu Asp Ala Ser Glu Leu Glu Pro Ala					
	545		550		555	
Phe Ser Arg Thr	Val Gly Thr Ile Gln His Cys Leu His Leu Thr Ser					
	565		570		575	
Val Tyr Thr His	Phe Leu Pro Gln Arg Gly Arg Pro Glu Val Thr Thr					
	580		585		590	
Met Pro Leu Gly	Leu Gly Met Thr Val Asp Tyr Ile Phe Phe Ser Ala					
	595		600		605	
Glu Ser Cys Glu	Asn Gly Asn Arg Thr Asp His Arg Leu Tyr Arg Asp					
	610		615		620	
Gly Thr Leu Lys	Leu Leu Gly Arg Leu Ser Leu Leu Ser Glu Glu Ile					
	625		630		635	
Leu Trp Ala Ala	Asn Gly Leu Pro Asn Pro Phe Cys Ser Ser Asp His					
	645		650		655	
Leu Cys Leu Leu	Ala Ser Phe Gly Met Glu Val Thr Ala Pro					
	660		665		670	

&lt;210&gt; 1305

&lt;211&gt; 228

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

<220>  
 <221> SITE  
 <222> (164)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (167)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (200)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (206)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (221)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1305  
 Met Ala Ala Ala Gly Ser Val Lys Ala Ala Leu Gln Val Ala Glu Val  
   1                  5                  10                  15  
 Leu Glu Ala Ile Val Ser Cys Cys Val Gly Pro Glu Gly Arg Gln Val  
                   20                  25                  30  
 Leu Cys Thr Lys Pro Thr Gly Glu Val Leu Leu Ser Arg Asn Gly Gly  
                   35                  40                  45  
 Arg Leu Leu Glu Ala Leu His Leu Glu His Pro Ile Ala Arg Met Ile  
   50                  55                  60  
 Val Asp Cys Val Ser Ser His Leu Lys Lys Thr Gly Asp Gly Ala Lys  
   65                  70                  75                  80  
 Thr Phe Ile Ile Phe Leu Cys His Leu Leu Arg Gly Leu His Ala Ile  
                   85                  90                  95  
 Thr Asp Arg Glu Lys Asp Pro Leu Met Cys Glu Asn Ile Gln Thr His  
                   100                  105                  110  
 Gly Arg His Trp Lys Asn Cys Ser Arg Trp Lys Phe Ile Ser Gln Ala  
                   115                  120                  125  
 Leu Leu Thr Phe Gln Thr Gln Ile Leu Asp Gly Ile Met Asp Gln Tyr  
   130                  135                  140  
 Leu Ser Arg His Phe Leu Ser Ile Phe Ser Ser Ala Lys Glu Arg Thr  
   145                  150                  155                  160  
 Leu Cys Arg Xaa Ser Leu Xaa Leu Leu Leu Glu Ala Tyr Phe Cys Gly  
                   165                  170                  175  
 Lys Val Gly Arg Asn Asn His Lys Phe Ile Ser Gln Leu Met Cys Asp

[illegible]

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<210> 1306
<211> 170
<212> PRT
<213> Homo sapiens
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<400> 1306																
Met	Ala	Ala	Ala	Gly	Ser	Val	Lys	Ala	Ala	Leu	Gln	Val	Ala	Glu	Val	
1				5					10					15		
Leu	Glu	Ala	Ile	Val	Ser	Cys	Cys	Val	Gly	Pro	Glu	Gly	Arg	Gln	Val	
			20					25					30			
Leu	Cys	Thr	Lys	Pro	Thr	Gly	Glu	Val	Leu	Leu	Ser	Arg	Asn	Gly	Gly	
		35					40					45				
Arg	Leu	Leu	Glu	Ala	Leu	His	Leu	Glu	His	Pro	Ile	Ala	Arg	Met	Ile	
	50					55					60					
Val	Asp	Cys	Val	Ser	Ser	His	Leu	Lys	Lys	Thr	Gly	Asp	Gly	Ala	Lys	
65					70					75					80	
Thr	Phe	Ile	Ile	Phe	Leu	Cys	His	Leu	Leu	Arg	Gly	Leu	His	Ala	Ile	
				85					90					95		
Thr	Asp	Arg	Glu	Lys	Asp	Pro	Leu	Met	Cys	Glu	Asn	Ile	Gln	Thr	His	
			100					105					110			
Gly	Arg	His	Trp	Lys	Asn	Cys	Ser	Arg	Trp	Lys	Phe	Ile	Ser	Gln	Ala	
		115					120					125				
Leu	Leu	Thr	Phe	Gln	Thr	Gln	Ile	Leu	Asp	Gly	Ile	Met	Asp	Gln	Tyr	
	130					135					140					
Leu	Ser	Arg	His	Phe	Leu	Ser	Ile	Phe	Ser	Ser	Ala	Lys	Glu	Arg	Thr	
145					150					155					160	
Leu	Cys	Arg	Ser	Ser	Leu	Glu	Ser	Val	Ser							
				165					170							

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<210> 1307 .
<211> 149
<212> PRT
<213> Homo sapiens
```

 $\langle 220 \rangle$

<221> SITE  
 <222> (87)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (95)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (107)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1307  
 Met Gly Ala Pro Leu Leu Ser Pro Gly Trp Gly Ala Gly Ala Ala Gly  
   1                  5                  10                  15  
  
 Arg Arg Trp Trp Met Leu Leu Ala Pro Leu Leu Pro Ala Leu Leu Leu  
                   20                  25                  30  
  
 Val Arg Pro Ala Gly Ala Leu Val Glu Gly Leu Tyr Cys Gly Thr Arg  
           35                  40                  45  
  
 Asp Cys Tyr Glu Val Leu Gly Val Ser Arg Ser Ala Gly Lys Ala Glu  
       50                  55                  60  
  
 Ile Ala Arg Ala Tyr Arg Gln Leu Ala Arg Arg Tyr His Pro Asp Arg  
   65                  70                  75                  80  
  
 Tyr Arg Pro Gln Pro Gly Xaa Glu Gly Pro Gly Arg Thr Pro Xaa Ser  
                   85                  90                  95  
  
 Ala Glu Glu Ala Phe Leu Leu Val Ala Thr Xaa Tyr Glu Thr Leu Lys  
           100                  105                  110  
  
 Asp Glu Glu Thr Arg Lys Asp Tyr Asp Tyr Met Leu Asp His Pro Glu  
       115                  120                  125  
  
 Glu Tyr Tyr Ser His Tyr Tyr His Tyr Tyr Ser Arg Arg Leu Ala Leu  
   130                  135                  140  
  
 Arg Trp Met Leu Glu  
 145

<210> 1308  
 <211> 360  
 <212> PRT  
 <213> Homo sapiens

<400> 1308  
 Met Gly Ala Pro Leu Leu Ser Pro Gly Trp Gly Ala Gly Ala Ala Gly  
   1                  5                  10                  15  
  
 Arg Arg Trp Trp Met Leu Leu Ala Pro Leu Leu Pro Ala Leu Leu Leu  
                   20                  25                  30  
  
 Val Arg Pro Ala Gly Ala Leu Val Glu Gly Leu Tyr Cys Gly Thr Arg

35                                      40                                      45  
 Asp Cys Tyr Glu Val Leu Gly Val Ser Arg Ser Ala Gly Lys Ala Glu  
     50                                      55                                      60  
 Ile Ala Arg Ala Tyr Arg Gln Leu Ala Arg Arg Tyr His Pro Asp Arg  
     65                                      70                                      75                                      80  
 Tyr Arg Pro Gln Pro Gly Asp Glu Gly Pro Gly Arg Thr Pro Gln Ser  
                                     85                                      90                                      95  
 Ala Glu Glu Ala Phe Leu Leu Val Ala Thr Ala Tyr Glu Thr Leu Lys  
                                     100                                      105                                      110  
 Asp Glu Glu Thr Arg Lys Asp Tyr Asp Tyr Met Leu Asp His Pro Glu  
                                     115                                      120                                      125  
 Glu Tyr Tyr Ser His Tyr Tyr His Tyr Tyr Ser Arg Arg Leu Ala Pro  
                                     130                                      135                                      140  
 Lys Val Asp Val Arg Val Val Ile Leu Val Ser Val Cys Ala Ile Ser  
     145                                      150                                      155                                      160  
 Val Phe Gln Phe Phe Ser Trp Trp Asn Ser Tyr Asn Lys Ala Ile Ser  
                                     165                                      170                                      175  
 Tyr Leu Ala Thr Val Pro Lys Tyr Arg Ile Gln Ala Thr Glu Ile Ala  
                                     180                                      185                                      190  
 Lys Gln Gln Gly Leu Leu Lys Lys Ala Lys Glu Lys Gly Lys Asn Lys  
                                     195                                      200                                      205  
 Lys Ser Lys Glu Glu Ile Arg Asp Glu Glu Glu Asn Ile Ile Lys Asn  
                                     210                                      215                                      220  
 Ile Ile Lys Ser Lys Ile Asp Ile Lys Gly Gly Tyr Gln Lys Pro Gln  
     225                                      230                                      235                                      240  
 Ile Cys Asp Leu Leu Leu Phe Gln Ile Ile Leu Ala Pro Phe His Leu  
                                     245                                      250                                      255  
 Cys Ser Tyr Ile Val Trp Tyr Cys Arg Trp Ile Tyr Asn Phe Asn Ile  
                                     260                                      265                                      270  
 Lys Gly Lys Glu Tyr Gly Glu Glu Glu Arg Leu Tyr Ile Ile Arg Lys  
                                     275                                      280                                      285  
 Ser Met Lys Met Ser Lys Ser Gln Phe Asp Ser Leu Glu Asp His Gln  
                                     290                                      295                                      300  
 Lys Glu Thr Phe Leu Lys Arg Glu Leu Trp Ile Lys Glu Asn Tyr Glu  
     305                                      310                                      315                                      320  
 Val Tyr Lys Gln Glu Gln Glu Glu Glu Leu Lys Lys Lys Leu Ala Asn  
                                     325                                      330                                      335  
 Asp Pro Arg Trp Lys Arg Tyr Arg Arg Trp Met Lys Asn Glu Gly Pro  
                                     340                                      345                                      350  
 Gly Arg Leu Thr Phe Val Asp Asp

355

360

&lt;210&gt; 1309

&lt;211&gt; 128

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (122)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1309

Met Glu Ser His Leu Ser Thr Trp Pro Cys His Pro Ser Cys Cys Leu  
 1 5 10 15

Phe Leu Ile Leu Leu Phe Pro Ser His Pro Thr Ser Met Thr Lys Ser  
 20 25 30

Lys Ala Arg Leu Pro His Leu Glu Asn Cys Ser Gln Asn Asp Thr Ser  
 35 40 45

Lys Pro Leu Gly Gln Ala Arg Pro Pro Ser Ser Pro Thr Arg Thr Thr  
 50 55 60

Asp Leu Thr Thr Gly Pro Thr Ser Ser Pro Ala Pro Leu Gly Ile Leu  
 65 70 75 80

His Thr Ala Val Arg Val Thr His Leu His Thr Leu Thr Leu Met Gly  
 85 90 95

Glu Glu Lys Ala Val Phe Val Ala Arg Ala Gln Val Gly Asn Leu Gly  
 100 105 110

Leu Val Phe Arg Lys Ala Arg Gly Ser Xaa Phe Pro Thr Leu Gly Arg  
 115 120 125

&lt;210&gt; 1310

&lt;211&gt; 112

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1310

Met Glu Ser His Leu Ser Thr Trp Pro Cys His Pro Ser Cys Cys Leu  
 1 5 10 15

Phe Leu Ile Leu Leu Phe Pro Ser His Pro Thr Ser Met Thr Lys Ser  
 20 25 30

Lys Ala Arg Leu Pro His Leu Glu Asn Cys Ser Gln Asn Asp Thr Ser  
 35 40 45

Lys Pro Leu Gly Gln Ala Arg Pro Pro Ser Ser Pro Thr Arg Thr Thr

770



50                      55                      60  
 Asp Leu Thr Thr Gly Pro Thr Ser Ser Pro Ala Pro Leu Gly Ile Leu  
 65                      70                      75                      80  
 His Thr Ala Val Arg Val Thr His Leu His Thr Leu Thr Leu Met Gly  
                     85                      90                      95  
 Glu Glu Lys Ala Val Phe Val Ala Arg Ala Gln Val Gly Thr Leu Ala  
                     100                      105                      110

<210> 1311  
 <211> 108  
 <212> PRT  
 <213> Homo sapiens

<400> 1311  
 Met Phe Val Ser Val Thr Ala Phe Phe Phe Ser Leu Leu Phe Leu Gly  
 1                      5                      10                      15  
 Met Phe Leu Ser Gly Met Val Ala Gln Ile Asp Ala Asn Trp Asn Phe  
                     20                      25                      30  
 Leu Asp Phe Ala Tyr His Phe Thr Val Phe Val Phe Tyr Phe Gly Ala  
                     35                      40                      45  
 Phe Leu Leu Glu Ala Ala Ala Thr Ser Leu His Asp Leu His Cys Asn  
                     50                      55                      60  
 Thr Thr Ile Thr Gly Gln Pro Leu Leu Ser Asp Asn Gln Tyr Asn Ile  
 65                      70                      75                      80  
 Asn Val Ala Ala Ser Ile Phe Ala Phe Met Thr Thr Ala Cys Tyr Gly  
                     85                      90                      95  
 Cys Ser Leu Gly Leu Ala Leu Arg Arg Trp Arg Pro  
                     100                      105

<210> 1312  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens

<400> 1312  
 Asn His Ile Gln His Lys Asn Tyr Phe Trp Leu Asn Ser Thr Glu Lys  
 1                      5                      10                      15  
 Tyr Phe Asn Leu Pro Val Glu Ile Leu Val Met Glu Arg Cys Gln Thr  
                     20                      25                      30  
 Val Leu Asn Gly Arg Thr Ser Lys Ser Glu Ala Thr Val Pro Thr Thr  
                     35                      40                      45

Arg Gly Leu Leu Tyr Cys Ser Thr Phe Ser Ala Leu Tyr Phe Leu Ala  
           50                          55                          60

Glu Ala Ser Pro Trp Ser Ala Met Tyr Lys Leu Gly Tyr  
       65                          70                          75

<210> 1313

<211> 108

<212> PRT

<213> Homo sapiens

<400> 1313

Met Phe Val Ser Val Thr Ala Phe Phe Phe Ser Leu Leu Phe Leu Gly  
       1                          5                          10                          15

Met Phe Leu Ser Gly Met Val Ala Gln Ile Asp Ala Asn Trp Asn Phe  
                           20                          25                          30

Leu Asp Phe Ala Tyr His Phe Thr Val Phe Val Phe Tyr Phe Gly Ala  
                           35                          40                          45

Phe Leu Leu Glu Ala Ala Ala Thr Ser Leu His Asp Leu His Cys Asn  
           50                          55                          60

Thr Thr Ile Thr Gly Gln Pro Leu Leu Ser Asp Asn Gln Tyr Asn Ile  
       65                          70                          75                          80

Asn Val Ala Ala Ser Ile Phe Ala Phe Met Thr Thr Ala Trp Tyr Gly  
                           85                          90                          95

Cys Ser Leu Gly Leu Ala Leu Arg Arg Trp Arg Pro  
                           100                          105

<210> 1314

<211> 176

<212> PRT

<213> Homo sapiens

<400> 1314

Met Ser Ala Gly Gly Ala Ser Val Pro Pro Pro Pro Asn Pro Ala Val  
       1                          5                          10                          15

Ser Phe Pro Pro Pro Arg Val Thr Leu Pro Ala Gly Pro Asp Ile Leu  
                           20                          25                          30

Arg Thr Tyr Ser Gly Ala Phe Val Cys Leu Glu Ile Leu Phe Gly Gly  
                           35                          40                          45

Leu Val Trp Ile Leu Val Ala Ser Ser Asn Val Pro Leu Pro Leu Leu  
           50                          55                          60

Gln Gly Trp Val Met Phe Val Ser Val Thr Ala Phe Phe Phe Ser Leu  
       65                          70                          75                          80

Leu Phe Leu Gly Met Phe Leu Ser Gly Met Val Ala Gln Ile Asp Ala  
                           85                          90                          95

Asn Trp Asn Phe Leu Asp Phe Ala Tyr His Phe Thr Val Phe Val Phe  
 100 105 110  
 Tyr Phe Gly Ala Phe Leu Leu Glu Ala Ala Ala Thr Ser Leu His Asp  
 115 120 125  
 Leu His Cys Asn Thr Thr Ile Thr Gly Gln Pro Leu Leu Ser Asp Asn  
 130 135 140  
 Gln Tyr Asn Ile Asn Val Ala Ala Ser Ile Phe Ala Phe Met Thr Thr  
 145 150 155 160  
 Ala Cys Tyr Gly Cys Ser Leu Gly Leu Ala Leu Arg Arg Trp Arg Pro  
 165 170 175

<210> 1315  
 <211> 103  
 <212> PRT  
 <213> Homo sapiens

<400> 1315  
 Met Pro Leu Cys Ser Leu Leu Thr Cys Leu Gly Leu Asn Val Leu Phe  
 1 5 10 15  
 Leu Thr Leu Asn Glu Gly Ala Trp Tyr Ser Val Gly Ala Leu Met Ile  
 20 25 30  
 Ser Val Pro Ala Leu Leu Gly Tyr Leu Gln Glu Val Cys Arg Ala Arg  
 35 40 45  
 Leu Pro Asp Ser Glu Leu Met Arg Arg Lys Tyr His Ser Val Arg Gln  
 50 55 60  
 Glu Asp Leu Gln Arg Val Arg Leu Ser Arg Pro Glu Ala Val Ala Glu  
 65 70 75 80  
 Val Lys Ser Phe Leu Ile Gln Leu Glu Ala Phe Leu Lys Pro Pro Val  
 85 90 95  
 Leu His Met Leu Lys Pro Pro  
 100

<210> 1316  
 <211> 237  
 <212> PRT  
 <213> Homo sapiens

<400> 1316  
 Met Pro Leu Cys Ser Leu Leu Thr Cys Leu Gly Leu Asn Val Leu Phe  
 1 5 10 15  
 Leu Thr Leu Asn Glu Gly Ala Trp Tyr Ser Val Gly Ala Leu Met Ile

20					25					30					
Ser	Val	Pro	Ala	Leu	Leu	Gly	Tyr	Leu	Gln	Glu	Val	Cys	Arg	Ala	Arg
		35					40					45			
Leu	Pro	Asp	Ser	Glu	Leu	Met	Arg	Arg	Lys	Tyr	His	Ser	Val	Arg	Gln
	50					55					60				
Glu	Asp	Leu	Gln	Arg	Val	Arg	Leu	Ser	Arg	Pro	Glu	Ala	Val	Ala	Glu
65					70					75					80
Val	Lys	Ser	Phe	Leu	Ile	Gln	Leu	Glu	Ala	Phe	Leu	Ser	Arg	Leu	Cys
				85					90					95	
Cys	Thr	Cys	Glu	Ala	Ala	Tyr	Arg	Val	Leu	His	Trp	Glu	Asn	Pro	Val
			100					105					110		
Val	Ser	Ser	Gln	Phe	Tyr	Gly	Ala	Leu	Leu	Gly	Thr	Val	Cys	Met	Leu
			115				120					125			
Tyr	Leu	Leu	Pro	Leu	Cys	Trp	Val	Leu	Thr	Leu	Leu	Asn	Ser	Thr	Leu
	130					135					140				
Phe	Leu	Gly	Asn	Val	Glu	Phe	Phe	Arg	Val	Val	Ser	Glu	Tyr	Arg	Ala
145					150					155					160
Ser	Leu	Gln	Gln	Arg	Met	Asn	Pro	Lys	Gln	Glu	Glu	His	Ala	Phe	Glu
				165					170					175	
Ser	Pro	Pro	Pro	Pro	Asp	Val	Gly	Gly	Lys	Asp	Gly	Leu	Met	Asp	Ser
			180					185					190		
Thr	Pro	Ala	Leu	Thr	Pro	Thr	Glu	Asp	Leu	Thr	Pro	Gly	Ser	Val	Glu
		195					200					205			
Glu	Ala	Glu	Glu	Ala	Glu	Pro	Asp	Glu	Glu	Phe	Lys	Asp	Ala	Ile	Asp
	210					215					220				
Glu	Asp	Asp	Glu	Gly	Ala	Pro	Cys	Pro	Ala	Leu	Phe	Leu			
225					230					235					

<210> 1317

<211> 165

<212> PRT

<213> Homo sapiens

$\langle 220 \rangle$

<221> SITE

<222> (54)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

 $\langle 222 \rangle \quad (62)$ 

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

&lt;222&gt; (64)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (96)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1317

Met Ala Arg Leu Gly Ala Val Arg Ser His Tyr Cys Ala Leu Leu Leu  
 1 5 10 15

Ala Ala Ala Leu Ala Val Cys Ala Phe Tyr Tyr Leu Gly Ser Gly Arg  
 20 25 30

Glu Thr Phe Ser Ser Ala Thr Lys Arg Leu Lys Glu Ala Arg Ala Gly  
 35 40 45

Ala Pro Ala Ala Pro Xaa Pro Pro Ala Leu Glu Leu Ala Xaa Gly Xaa  
 50 55 60

Val Ala Pro Ala Pro Gly Ala Lys Ala Lys Ser Leu Glu Gly Gly Gly  
 65 70 75 80

Ala Gly Pro Val Asp Tyr His Leu Leu Met Met Phe Thr Lys Ala Xaa  
 85 90 95

His Asn Ala Ala Leu Gln Ala Lys Ala Arg Val Ala Leu Arg Ser Leu  
 100 105 110

Leu Arg Leu Ala Lys Phe Glu Ala His Glu Val Leu Asn Leu His Phe  
 115 120 125

Val Ser Glu Glu Ala Ser Arg Glu Val Ala Lys Gly Leu Leu Arg Glu  
 130 135 140

Leu Leu Pro Pro Pro Leu Ala Ser Ser Ala Arg Ser Ser Ser Thr Ile  
 145 150 155 160

Cys Cys Ala Asp Gly  
 165

&lt;210&gt; 1318

&lt;211&gt; 159

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1318

Ala Ser Lys Arg Met Pro Ala His His Ile Leu Thr Leu Gly Gly Cys  
 1 5 10 15

Cys Thr Arg Ile Leu Leu Met Leu Thr Ser Leu Gly Val Gly Phe Arg  
 20 25 30

Ile Ala Ser Leu Arg Lys Asp Phe Arg Thr Asn Trp Gly Leu His Lys  
 35 40 45

Lys Thr Tyr Leu Ile Ile Arg Val Leu Thr Ala Cys Ile Ser Gln Leu

50                                      55                                      60  
 His Pro Arg Thr Pro Leu Ser Phe Ile Pro Pro Asn Gln Leu Gln Val  
 65                                      70                                      75                                      80  
 Thr Arg Leu Tyr Ser Glu Ser Lys Phe Val Ile Lys Glu Gln Arg Leu  
 85                                      90                                      95  
 Ala Thr Thr Arg Thr Cys Arg Arg Thr Val Gly Thr Arg Lys Thr His  
 100                                      105                                      110  
 Ser Lys Lys Pro Arg Pro Gly Thr Val Val Lys Pro Val Ile Pro Thr  
 115                                      120                                      125  
 Leu Trp Glu Thr Glu Val Gly Val Ser Ile Glu Pro Arg Arg Ser Arg  
 130                                      135                                      140  
 Ser Ala Trp Glu Thr Gln Gly Gly Pro His Arg Tyr Lys Ile Phe  
 145                                      150                                      155

&lt;210&gt; 1319

&lt;211&gt; 380

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1319

Met Ala Arg Leu Gly Ala Val Arg Ser His Tyr Cys Ala Leu Leu Leu  
 1                                      5                                      10                                      15  
 Ala Ala Ala Leu Ala Val Cys Ala Phe Tyr Tyr Leu Gly Ser Gly Arg  
 20                                      25                                      30  
 Glu Thr Phe Ser Ser Ala Thr Lys Arg Leu Lys Glu Ala Arg Ala Gly  
 35                                      40                                      45  
 Ala Pro Ala Ala Pro Ser Pro Ala Leu Glu Leu Ala Arg Gly Ser  
 50                                      55                                      60  
 Val Ala Pro Ala Pro Gly Ala Lys Ala Lys Ser Leu Glu Gly Gly Gly  
 65                                      70                                      75                                      80  
 Ala Gly Pro Val Asp Tyr His Leu Leu Met Met Phe Thr Lys Ala Glu  
 85                                      90                                      95  
 His Asn Ala Ala Leu Gln Ala Lys Ala Arg Val Ala Leu Arg Ser Leu  
 100                                      105                                      110  
 Leu Arg Leu Ala Lys Phe Glu Ala His Glu Val Leu Asn Leu His Phe  
 115                                      120                                      125  
 Val Ser Glu Glu Ala Ser Arg Glu Val Ala Lys Gly Leu Leu Arg Glu  
 130                                      135                                      140  
 Leu Leu Pro Pro Ala Ala Gly Phe Lys Cys Lys Val Ile Phe His Asp  
 145                                      150                                      155                                      160  
 Val Ala Val Leu Thr Asp Lys Leu Phe Pro Ile Val Glu Ala Met Gln  
 165                                      170                                      175

Lys His Phe Ser Ala Gly Leu Gly Thr Tyr Tyr Ser Asp Ser Ile Phe  
 180 185 190  
 Phe Leu Ser Val Ala Met His Gln Ile Met Pro Lys Glu Ile Leu Gln  
 195 200 205  
 Ile Ile Gln Leu Asp Leu Asp Leu Lys Phe Lys Thr Asn Ile Arg Glu  
 210 215 220  
 Leu Phe Glu Glu Phe Asp Ser Phe Leu Pro Gly Ala Ile Ile Gly Ile  
 225 230 235 240  
 Ala Arg Glu Met Gln Pro Val Tyr Arg His Thr Phe Trp Gln Phe Arg  
 245 250 255  
 His Glu Asn Pro Gln Thr Arg Val Gly Gly Pro Pro Pro Glu Gly Leu  
 260 265 270  
 Pro Gly Phe Asn Ser Gly Val Met Leu Leu Asn Leu Glu Ala Met Arg  
 275 280 285  
 Gln Ser Pro Leu Tyr Ser Arg Leu Leu Glu Pro Ala Gln Val Gln Gln  
 290 295 300  
 Leu Ala Asp Lys Tyr His Phe Arg Gly His Leu Gly Asp Gln Asp Phe  
 305 310 315 320  
 Phe Thr Met Ile Gly Met Glu His Pro Lys Leu Phe His Val Leu Asp  
 325 330 335  
 Cys Thr Trp Asn Arg Gln Leu Cys Thr Trp Trp Arg Asp His Gly Tyr  
 340 345 350  
 Ser Asp Val Phe Glu Ala Tyr Phe Arg Cys Glu Gly His Val Lys Ile  
 355 360 365  
 Tyr His Gly Asn Cys Asn Thr Pro Ile Pro Glu Asp  
 370 375 380

&lt;210&gt; 1320

&lt;211&gt; 73

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1320

Leu Glu Ser Tyr Ser Ser Val Arg Glu Leu Leu Val Ser Val Arg Phe  
 1 5 10 15  
 Tyr Val Val Cys Lys Val Arg Gly Ser Val Leu Phe Pro Tyr Leu Gly  
 20 25 30  
 Lys Ser Thr Ala Gly Val Glu Gly Leu Tyr Val Pro Phe Asn Val Thr  
 35 40 45  
 Val Leu Lys Asp Leu Ser Arg Glu Ser Glu Ser Phe Ala Glu Cys Asp  
 50 55 60

Arg Arg Leu Asn Asn Leu Ile Cys Phe  
65 70

<210> 1321  
<211> 95  
<212> PRT  
<213> Homo sapiens

<400> 1321  
Met Ala Ala Ser Arg Trp Ala Arg Lys Ala Val Val Leu Leu Cys Ala  
1 5 10 15  
Ser Asp Leu Leu Leu Leu Leu Leu Leu Leu Pro Pro Pro Gly Ser Cys  
20 25 30  
Ala Ala Glu Ala Arg Pro Gly Arg Pro Thr Ser Leu Pro His Leu Pro  
35 40 45  
Gly Arg Arg Arg Arg Ile Phe Ala Ile Thr Met Met Gln Thr Trp Arg  
50 55 60  
Val Phe Trp Ser Asn Gly Arg Lys Met Met Thr Leu Lys Lys Glu Ile  
65 70 75 80  
Phe Gln Ser Thr Arg Asp Leu Gln His Leu Ser Thr Ser Gln Arg  
85 90 95

<210> 1322  
<211> 234  
<212> PRT  
<213> Homo sapiens

<400> 1322  
Met Ala Ala Ser Arg Trp Ala Arg Lys Ala Val Val Leu Leu Cys Ala  
1 5 10 15  
Ser Asp Leu Leu Leu Leu Leu Leu Leu Leu Pro Pro Pro Gly Ser Cys  
20 25 30  
Ala Ala Glu Gly Ser Pro Gly Thr Pro Asp Glu Ser Thr Pro Pro Pro  
35 40 45  
Arg Lys Lys Lys Lys Asp Ile Arg Asp Tyr Asn Asp Ala Asp Met Ala  
50 55 60  
Arg Leu Leu Glu Gln Trp Glu Lys Asp Asp Asp Ile Glu Glu Gly Asp  
65 70 75 80  
Leu Pro Glu His Lys Arg Pro Ser Ala Pro Val Asp Phe Ser Lys Ile  
85 90 95  
Asp Pro Ser Lys Pro Glu Ser Ile Leu Lys Met Thr Lys Lys Gly Lys  
100 105 110  
Thr Leu Met Met Phe Val Thr Val Ser Gly Ser Pro Thr Glu Lys Glu  
115 120 125



Thr Glu Glu Ile Thr Ser Leu Trp Gln Gly Ser Leu Phe Asn Ala Asn  
 130 135 140  
 Tyr Asp Val Gln Arg Phe Ile Val Gly Ser Asp Arg Ala Ile Phe Met  
 145 150 155 160  
 Leu Arg Asp Gly Ser Tyr Ala Trp Glu Ile Lys Asp Phe Leu Val Gly  
 165 170 175  
 Gln Asp Arg Cys Ala Asp Val Thr Leu Glu Gly Gln Val Tyr Pro Gly  
 180 185 190  
 Lys Gly Gly Gly Ser Lys Glu Lys Asn Lys Thr Lys Gln Asp Lys Gly  
 195 200 205  
 Lys Lys Lys Lys Glu Gly Asp Leu Lys Ser Arg Ser Ser Lys Glu Glu  
 210 215 220  
 Asn Arg Ala Gly Asn Lys Arg Glu Asp Leu  
 225 230

<210> 1323  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 1323  
 Asn Ala Thr Lys Ser Gln Pro Cys Leu Ser Ser Leu Leu Leu Phe  
 1 5 10 15

<210> 1324  
 <211> 62  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1324  
 Lys Tyr Xaa Lys His Pro Ser Lys Ser Phe Glu Leu Thr Leu Val Leu  
 1 5 10 15  
 Arg Lys Leu Ser Leu His Asn Gln Pro Pro Gly Lys Thr Glu Cys His  
 20 25 30  
 Leu Leu Lys Ser Lys Cys Cys Val Ile Ile Thr Leu Gln Thr Lys Trp  
 35 40 45  
 Arg Tyr Tyr Leu Phe Cys Lys Gln Gln Thr Lys Gln Asn Ser  
 50 55 60

<210> 1325  
 <211> 15  
 <212> PRT  
 <213> Homo sapiens

<400> 1325  
 Asn Ala Thr Lys Ser Gln Pro Cys Leu Ser Ser Leu Leu Leu Phe  
       1                  5                  10                  15

<210> 1326  
 <211> 228  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (92)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (134)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (170)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (195)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (205)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (209)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (214)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1326  
 Met Val Pro Asn Trp Ile Gln Gly Arg Trp Asp Val Leu Leu Cys Val  
       1                  5                  10                  15

Leu Thr Val Gly Val Leu Pro Ser Ile Gly Ser Arg Gly Gly Trp Phe  
           20                  25                  30

Gly Thr Gln Val Pro Cys Leu Ile Pro Gly Ala Leu Ala Ser Leu His  
       35                  40                  45

Arg Gly Thr Ala Leu Gln Leu Ser Tyr Pro Phe Ser Met Ala Gly Arg  
 50 55 60  
 Thr Ala Glu Arg Pro Cys Ser Met Thr Asn His Ser Phe His Leu Leu  
 65 70 75 80  
 Ser Ile Tyr Trp Glu Leu Gly Thr Val Leu Ser Xaa Lys Arg Val Leu  
 85 90 95  
 Thr His Leu Leu Gln Gln Pro Gly Lys Ala Gly Ser Ser Val Ser Pro  
 100 105 110  
 Cys Ser Lys Leu Gly Asp Leu Glu His Arg Arg Ser Ser Ala Trp Leu  
 115 120 125  
 Lys Ala His Ser Ser Xaa Val Gln Ile Leu Cys Pro Ser Trp His Pro  
 130 135 140  
 Ser Leu Gly Gly Ser Gly Val Gly Ser Leu Gln Ser Val Pro Gly Gly  
 145 150 155 160  
 Trp Met Thr Lys Leu Gln Pro Ser Arg Xaa Pro Thr Ile Ser Ile Ala  
 165 170 175  
 Gln Trp Ser Gln Lys Glu Thr Asp His Phe Thr Asp Gln Arg Asn Lys  
 180 185 190  
 Gly Ala Xaa Leu Leu Asn Pro Gly Ala Ser Asp Arg Xaa Lys Pro Glu  
 195 200 205  
 Xaa Arg Thr Lys Lys Xaa Pro Val Asn Ser Glu Pro Gly Glu Thr Leu  
 210 215 220  
 Pro Phe Thr Asn  
 225

<210> 1327  
 <211> 84  
 <212> PRT  
 <213> Homo sapiens

<400> 1327  
 Asp Asn Phe Leu Leu Gly Val Ala Trp Phe Phe Arg Gly Arg Gly Ser  
 1 5 10 15  
 Ala His Val Gly Val Val Ser Arg Gln Lys Gln Trp Glu Glu Gly Thr  
 20 25 30  
 Ala Lys His Ala Ala Trp Asp Tyr Gly Cys Pro Gln Ser Cys Ser Phe  
 35 40 45  
 Ser Lys Gly Val Phe Cys Leu Phe Leu Arg Gln Gly His Thr Leu Ser  
 50 55 60  
 Pro Arg Met Glu Cys Ser Gly Pro Ile Leu Ala His Cys Asn Leu Glu  
 65 70 75 80

Leu Leu Gly Ser

<210> 1328

<211> 174

<212> PRT

<213> Homo sapiens

<400> 1328

Met Val Pro Asn Trp Ile Gln Gly Arg Trp Asp Val Leu Leu Cys Val  
1 5 10 15

Leu Thr Val Gly Val Leu Pro Ser Ile Gly Ser Arg Gly Gly Trp Phe  
20 25 30

Gly Thr Gln Val Pro Cys Leu Ile Pro Gly Ala Leu Ala Ser Leu His  
35 40 45

Arg Gly Thr Ala Leu Gln Leu Ser Tyr Pro Phe Ser Met Ala Gly Arg  
50 55 60

Thr Ala Glu Arg Pro Cys Ser Met Thr Asn His Ser Phe His Leu Leu  
65 70 75 80

Ser Ile Tyr Trp Glu Leu Gly Thr Val Leu Ser Val Lys Arg Val Leu  
85 90 95

Thr His Leu Leu Gln Gln Pro Gly Lys Ala Gly Ser Ser Val Ser Pro  
100 105 110

Cys Ser Lys Leu Gly Asp Leu Glu His Arg Arg Ser Ser Ala Trp Leu  
115 120 125

Lys Ala His Ser Ser Glu Val Gln Ile Leu Cys Pro Ser Trp His Pro  
130 135 140

Ser Leu Gly Gly Ser Gly Val Gly Ser Leu Gln Ser Val Pro Gly Gly  
145 150 155 160

Trp Met Thr Ser Cys Ser Leu Pro Ala Thr Pro Arg Phe Pro  
165 170

<210> 1329

<211> 115

<212> PRT

<213> Homo sapiens

<400> 1329

Met Val Pro Asn Trp Ile Gln Gly Arg Trp Asp Val Leu Leu Cys Val  
1 5 10 15

Leu Thr Val Gly Val Leu Pro Ser Ile Gly Ser Arg Gly Gly Trp Phe  
20 25 30

Gly Thr Gln Val Pro Cys Leu Ile Pro Gly Ala Leu Ala Ser Leu His  
35 40 45

Arg Gly Thr Ala Leu Gln Leu Ser Tyr Pro Phe Ser Met Ala Gly Arg  
 50 55 60

Thr Ala Glu Arg Pro Cys Ser Met Thr Asn His Ser Phe His Leu Leu  
 65 70 75 80

Ser Ile Tyr Trp Glu Leu Gly Thr Val Leu Ser Val Lys Arg Val Leu  
 85 90 95

Thr His Leu Leu Gln Gln Pro Gly Lys Ala Val Leu Pro Leu Ala Pro  
 100 105 110

Ala Gln Ser  
 115

<210> 1330  
 <211> 59  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (54)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (56)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1330  
 Met Glu Asn Gln Met Leu Thr Cys Val Ala Ile Phe Val Leu Phe Cys  
 1 5 10 15

Phe Val Leu Phe Leu Arg Gln Gly Leu Ala Leu Ser Pro Arg Leu Glu  
 20 25 30

Cys Ser Gly Met Ile Arg Ala Tyr Cys Ser Leu Thr Leu Asp Phe Leu  
 35 40 45

Gly Ser Ser Asn Pro Xaa Thr Xaa Ala Pro Lys  
 50 55

<210> 1331  
 <211> 59  
 <212> PRT  
 <213> Homo sapiens

<400> 1331  
 Met Glu Asn Gln Met Leu Thr Cys Val Ala Ile Phe Val Leu Phe Cys  
 1 5 10 15

Phe Val Leu Phe Leu Arg Gln Gly Leu Ala Leu Ser Pro Arg Leu Glu  
 20 25 30

Cys Ser Gly Met Ile Arg Ala Tyr Cys Ser Leu Thr Leu Asp Phe Leu  
                   35                                  40                                  45

Gly Ser Ser Asn Pro Pro Thr Ser Ala Pro Lys  
           50                                  55

<210> 1332  
 <211> 100  
 <212> PRT  
 <213> Homo sapiens

<400> 1332

Gly Ser Phe Leu Ser Pro Trp Gly Pro Ile Leu Trp Gly Leu Gly Ala  
   1                                  5                                  10                                  15

Gly Val Leu Met Gly Asp Ala Leu Gln Gly Arg Glu Gly Arg Met Gln  
                   20                                  25                                  30

Ala Thr Val Gly Ala Gly Pro Glu Gly Ser Glu Thr Val Ala Val Gln  
                   35                                  40                                  45

Val Cys Val Ile Arg Glu Ala Val Val Gly Glu Glu Val Ser Asp Cys  
           50                                  55                                  60

Val Ala Pro Leu Cys Gly Val Gly Gly Gln Gly Gly Ala Ala Lys Glu  
   65                                  70                                  75                                  80

Ala Arg Lys Met Gly Gly Gly Trp Asp Gly Leu Gly Ser His Ile His  
                   85                                  90                                  95

Val Leu Asp Phe  
                   100

<210> 1333  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<400> 1333

Met Leu Ile Leu Gly Ser Met Phe Ser Leu Val Glu Pro Val Leu Thr  
   1                                  5                                  10                                  15

Ile Ala Ala Ala Leu Ser Val Gln Ser Pro Phe Thr Arg Ser Ala Gln  
                   20                                  25                                  30

Ser Ser Pro Glu Cys Ala Ala Ala Arg Arg Pro Leu Glu Ser Asp Gln  
                   35                                  40                                  45

Gly Asp Pro Phe Thr Leu Phe Asn Val Phe Asn Ala Trp Val Gln Val  
           50                                  55                                  60

Lys Ser Glu Arg Ser Arg Asn Ser Arg Lys Trp Cys Arg Arg Arg Gly  
   65                                  70                                  75                                  80

Ile Glu Glu His Arg Leu Tyr Glu Met Ala Asn Phe Gly Ala Ser Ser  
                   85                                  90                                  95

Arg Thr Val

&lt;210&gt; 1334

&lt;211&gt; 163

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1334

Ala Leu Ala Arg Ala Ser Arg Thr Asp Asp Leu His Pro Leu Ala Leu  
 1 5 10 15

Ala Gly Ala Thr His Arg Pro Cys Pro Glu Asp Gln Glu Pro Lys Ala  
 20 25 30

Gly Arg Ala Trp Ser Ala Thr Ser Phe Cys Leu Pro Val Pro Cys Gly  
 35 40 45

Val Ser Val Leu Leu Ser Leu Ser Leu Phe Leu Ser Leu Cys Gly Tyr  
 50 55 60

Val Ser Cys Tyr Phe Ser Leu Ser Cys Ser Tyr Leu Cys Leu Gly His  
 65 70 75 80

Leu His Pro Val Val Thr Gln Gly Cys His Thr Leu Gly Phe Ser Gly  
 85 90 95

Gly Asp Ser Thr Gly Ala Thr Cys Leu His Pro Arg Leu Ala Val Ser  
 100 105 110

Ala Cys Gln Ser Pro Cys Leu Ser Leu Cys Leu Ser Leu Cys Leu Ser  
 115 120 125

His Trp Gln Gly Cys Gly Val Lys Thr Asp Leu Cys Ile Phe Ile Asn  
 130 135 140

Leu Gly Gly Leu Pro Gly Gly Gly Lys Thr Gly Phe Ser Lys Gly Gln  
 145 150 155 160

Glu Arg Thr

&lt;210&gt; 1335

&lt;211&gt; 552

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (142)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1335

Met Leu Ile Leu Gly Ser Met Phe Ser Leu Val Glu Pro Val Leu Thr  
 1 5 10 15

Ile Ala Ala Ala Leu Ser Val Gln Ser Pro Phe Thr Arg Ser Ala Gln  
 20 25 30  
 Ser Ser Pro Glu Cys Ala Ala Ala Arg Arg Pro Leu Glu Ser Asp Gln  
 35 40 45  
 Gly Asp Pro Phe Thr Leu Phe Asn Val Phe Asn Ala Trp Val Gln Val  
 50 55 60  
 Lys Ser Glu Arg Ser Arg Asn Ser Arg Lys Trp Cys Arg Arg Arg Gly  
 65 70 75 80  
 Ile Glu Glu His Arg Leu Tyr Glu Met Ala Asn Leu Arg Arg Gln Phe  
 85 90 95  
 Lys Glu Leu Leu Glu Asp His Gly Leu Leu Ala Gly Ala Gln Ala Ala  
 100 105 110  
 Gln Val Gly Asp Ser Tyr Ser Arg Leu Gln Gln Arg Arg Glu Arg Arg  
 115 120 125  
 Ala Leu His Gln Leu Lys Arg Gln His Glu Glu Gly Ala Xaa Cys Arg  
 130 135 140  
 Arg Lys Val Leu Arg Leu Gln Glu Glu Gln Asp Gly Gly Ser Ser Asp  
 145 150 155 160  
 Glu Asp Arg Ala Gly Pro Ala Pro Pro Gly Ala Ser Asp Gly Val Asp  
 165 170 175  
 Ile Gln Asp Val Lys Phe Lys Leu Arg His Asp Leu Ala Gln Leu Gln  
 180 185 190  
 Ala Ala Ala Ser Ser Ala Gln Asp Leu Ser Arg Glu Gln Leu Ala Leu  
 195 200 205  
 Leu Lys Leu Val Leu Gly Arg Gly Leu Tyr Pro Gln Leu Ala Val Pro  
 210 215 220  
 Asp Ala Phe Asn Ser Ser Arg Lys Asp Ser Asp Gln Ile Phe His Thr  
 225 230 235 240  
 Gln Ala Lys Gln Gly Ala Val Leu His Pro Thr Cys Val Phe Ala Gly  
 245 250 255  
 Ser Pro Glu Val Leu His Ala Gln Glu Leu Glu Ala Ser Asn Cys Asp  
 260 265 270  
 Gly Ser Arg Asp Asp Lys Asp Lys Met Ser Ser Lys His Gln Leu Leu  
 275 280 285  
 Ser Phe Val Ser Leu Leu Glu Thr Asn Lys Pro Tyr Leu Val Asn Cys  
 290 295 300  
 Val Arg Ile Pro Ala Leu Gln Ser Leu Leu Leu Phe Ser Arg Ser Leu  
 305 310 315 320  
 Asp Thr Asn Gly Asp Cys Ser Arg Leu Val Ala Asp Gly Trp Leu Glu  
 325 330 335



Leu Gln Leu Ala Asp Ser Glu Ser Ala Ile Arg Leu Leu Ala Ala Ser  
 340 345 350  
 Leu Arg Leu Arg Ala Arg Trp Glu Ser Ala Leu Asp Arg Gln Leu Ala  
 355 360 365  
 His Gln Ala Gln Gln Gln Leu Glu Glu Glu Glu Asp Thr Pro Val  
 370 375 380  
 Ser Pro Lys Glu Val Ala Thr Leu Ser Lys Glu Leu Leu Gln Phe Thr  
 385 390 395 400  
 Ala Ser Lys Ile Pro Tyr Ser Leu Arg Arg Leu Thr Gly Leu Glu Val  
 405 410 415  
 Gln Asn Met Tyr Val Gly Pro Gln Thr Ile Pro Ala Thr Pro His Leu  
 420 425 430  
 Pro Gly Leu Phe Gly Ser Ser Thr Leu Ser Pro His Pro Thr Lys Gly  
 435 440 445  
 Gly Tyr Ala Val Thr Asp Phe Leu Thr Tyr Asn Cys Leu Thr Asn Asp  
 450 455 460  
 Thr Asp Leu Tyr Ser Asp Cys Leu Arg Thr Phe Trp Thr Cys Pro His  
 465 470 475 480  
 Cys Gly Leu His Ala Pro Leu Thr Pro Leu Glu Arg Ile Ala His Glu  
 485 490 495  
 Asn Thr Cys Pro Gln Ala Pro Gln Asp Gly Pro Pro Gly Ala Glu Glu  
 500 505 510  
 Ala Ala Leu Glu Thr Leu Gln Lys Thr Ser Val Leu Gln Arg Pro Tyr  
 515 520 525  
 His Cys Glu Ala Cys Gly Lys Asp Phe Leu Phe Thr Pro Thr Glu Val  
 530 535 540  
 Leu Arg His Arg Lys Gln His Val  
 545 550

<210> 1336  
 <211> 78  
 <212> PRT  
 <213> Homo sapiens

<400> 1336  
 Met Ser Leu Tyr Gly Thr Arg Trp Arg Ile Ser Trp Pro His Trp Arg  
 1 5 10 15  
 Arg Val Val Leu Val Ser Leu Leu Ser Ser Ser Gly Gly Gln Ile Ser  
 20 25 30  
 Pro Ser Leu Ser His His Leu Pro Cys Ser Asp Phe Phe Glu Leu Glu  
 35 40 45

Thr Ser Leu Ala Leu Phe Trp Leu Thr Thr Leu Val Pro Ser Ile Thr  
 50 55 60  
 Asn Ile Thr Arg Val Phe Thr Thr Leu Leu Arg Thr Leu Met  
 65 70 75

<210> 1337  
 <211> 78  
 <212> PRT  
 <213> Homo sapiens

<400> 1337  
 Met Ser Leu Tyr Gly Thr Arg Trp Arg Ile Ser Trp Pro His Trp Arg  
 1 5 10 15  
 Arg Val Val Leu Val Ser Leu Leu Ser Ser Ser Gly Gly Gln Ile Ser  
 20 25 30  
 Pro Ser Leu Ser His His Leu Pro Cys Ser Asp Phe Phe Glu Leu Glu  
 35 40 45  
 Thr Ser Leu Ala Leu Phe Trp Leu Thr Thr Leu Val Pro Ser Ile Thr  
 50 55 60  
 Asn Ile Thr Arg Val Phe Thr Thr Leu Leu Arg Thr Leu Met  
 65 70 75

<210> 1338  
 <211> 159  
 <212> PRT  
 <213> Homo sapiens

<400> 1338  
 Met Gly Cys Leu Trp Gly Leu Ala Leu Pro Leu Phe Phe Phe Cys Trp  
 1 5 10 15  
 Glu Val Gly Val Ser Gly Ser Ser Ala Gly Pro Ser Thr Arg Arg Ala  
 20 25 30  
 Asp Thr Ala Met Thr Thr Asp Asp Thr Glu Val Pro Ala Met Thr Leu  
 35 40 45  
 Ala Pro Gly His Ala Ala Leu Glu Thr Gln Thr Leu Ser Ala Glu Thr  
 50 55 60  
 Ser Ser Arg Ala Ser Thr Pro Ala Gly Pro Ile Pro Glu Ala Glu Thr  
 65 70 75 80  
 Arg Gly Ala Lys Arg Ile Ser Pro Ala Arg Glu Thr Arg Ser Phe Thr  
 85 90 95  
 Lys Thr Ser Pro Asn Phe Met Val Leu Ile Ala Thr Ser Val Glu Thr  
 100 105 110  
 Ser Ala Ala Ser Gly Ser Pro Glu Gly Ala Arg Met Thr Thr Val Gln  
 115 120 125

Thr Ile Thr Gly Ser Asp Pro Arg Lys Pro Ser Leu Thr Pro Phe Ala  
 130 135 140

Pro Met Thr Ala Leu Lys Arg Gln Arg His Ser Gln Trp Thr Tyr  
 145 150 155

<210> 1339

<211> 149

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (114)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (123)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (144)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1339

Met Gly Cys Leu Trp Gly Leu Ala Leu Pro Leu Phe Phe Phe Cys Trp  
 1 5 10 15

Glu Val Gly Val Ser Gly Ser Ser Ala Gly Pro Ser Thr Arg Arg Ala  
 20 25 30

Asp Thr Ala Met Thr Thr Asp Asp Thr Glu Val Pro Ala Met Thr Leu  
 35 40 45

Ala Pro Gly His Ala Ala Leu Glu Thr Gln Thr Leu Ser Ala Glu Thr  
 50 55 60

Ser Ser Arg Ala Ser Thr Pro Ala Gly Pro Ile Pro Glu Ala Glu Thr  
 65 70 75 80

Arg Gly Ala Lys Arg Ile Ser Pro Ala Arg Glu Thr Arg Ser Phe Thr  
 85 90 95

Lys Thr Ser Pro Asn Phe Met Val Leu Ile Ala Thr Ser Val Glu Thr  
 100 105 110

Ser Xaa Ala Ser Gly Ser Pro Glu Gly Ala Xaa Met Thr Thr Val Gln  
 115 120 125

Thr Ile Thr Gly Ser Asp Pro Arg Glu Ala Ile Phe Asp Thr Leu Xaa  
 130 135 140

Thr Asp Asp Ser Ser  
 145

&lt;210&gt; 1340

&lt;211&gt; 595

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1340

Met Gly Cys Leu Trp Gly Leu Ala Leu Pro Leu Phe Phe Phe Cys Trp  
 1 5 10 15

Glu Val Gly Val Ser Gly Ser Ser Ala Gly Pro Ser Thr Arg Arg Ala  
 20 25 30

Asp Thr Ala Met Thr Thr Asp Asp Thr Glu Val Pro Ala Met Thr Leu  
 35 40 45

Ala Pro Gly His Ala Ala Leu Glu Thr Gln Thr Leu Ser Ala Glu Thr  
 50 55 60

Ser Ser Arg Ala Ser Thr Pro Ala Gly Pro Ile Pro Glu Ala Glu Thr  
 65 70 75 80

Arg Gly Ala Lys Arg Ile Ser Pro Ala Arg Glu Thr Arg Ser Phe Thr  
 85 90 95

Lys Thr Ser Pro Asn Phe Met Val Leu Ile Ala Thr Ser Val Glu Thr  
 100 105 110

Ser Ala Ala Ser Gly Ser Pro Glu Gly Ala Arg Met Thr Thr Val Gln  
 115 120 125

Thr Ile Thr Gly Ser Asp Pro Arg Glu Ala Ile Phe Asp Thr Leu Cys  
 130 135 140

Thr Asp Asp Ser Ser Glu Glu Ala Lys Thr Leu Thr Met Asp Ile Leu  
 145 150 155 160

Thr Leu Ala His Thr Ser Thr Glu Ala Lys Gly Leu Ser Ser Glu Ser  
 165 170 175

Ser Ala Ser Ser Asp Gly Pro His Pro Val Ile Thr Pro Ser Arg Ala  
 180 185 190

Ser Glu Ser Ser Ala Ser Ser Asp Gly Pro His Pro Val Ile Thr Pro  
 195 200 205

Ser Arg Ala Ser Glu Ser Ser Ala Ser Ser Asp Gly Pro His Pro Val  
 210 215 220

Ile Thr Pro Ser Arg Ala Ser Glu Ser Ser Ala Ser Ser Asp Gly Pro  
 225 230 235 240

His Pro Val Ile Thr Pro Ser Arg Ala Ser Glu Ser Ser Ala Ser Ser  
 245 250 255

Asp Gly Pro His Pro Val Ile Thr Pro Ser Arg Ala Ser Glu Ser Ser  
 260 265 270

Ala Ser Ser Asp Gly Pro His Pro Val Ile Thr Pro Ser Trp Ser Pro

275					280					285					
Gly	Ser	Asp	Val	Thr	Leu	Leu	Ala	Glu	Ala	Leu	Val	Ser	Val	Thr	Asn
290						295					300				
Ile	Glu	Val	Ile	Asn	Cys	Ser	Ile	Thr	Glu	Ile	Glu	Thr	Thr	Thr	Ser
305				310						315					320
Ser	Ile	Pro	Gly	Ala	Ser	Asp	Thr	Asp	Leu	Ile	Pro	Thr	Glu	Gly	Val
			325						330					335	
Lys	Ala	Ser	Ser	Thr	Ser	Asp	Pro	Pro	Ala	Leu	Pro	Asp	Ser	Thr	Glu
			340					345					350		
Ala	Lys	Pro	His	Ile	Thr	Glu	Val	Thr	Ala	Ser	Ala	Glu	Thr	Leu	Ser
		355					360					365			
Thr	Ala	Gly	Thr	Thr	Glu	Ser	Ala	Ala	Pro	Asp	Ala	Thr	Val	Gly	Thr
	370					375					380				
Pro	Leu	Pro	Thr	Asn	Ser	Ala	Thr	Glu	Arg	Glu	Val	Thr	Ala	Pro	Gly
385				390						395					400
Ala	Thr	Thr	Leu	Ser	Gly	Ala	Leu	Val	Thr	Val	Ser	Arg	Asn	Pro	Leu
			405					410					415		
Glu	Glu	Thr	Ser	Ala	Leu	Ser	Val	Glu	Thr	Pro	Ser	Tyr	Val	Lys	Val
			420					425					430		
Ser	Gly	Ala	Ala	Pro	Val	Ser	Ile	Glu	Ala	Gly	Ser	Ala	Val	Gly	Lys
		435					440					445			
Thr	Thr	Ser	Phe	Ala	Gly	Ser	Ser	Ala	Ser	Ser	Tyr	Ser	Pro	Ser	Glu
	450					455					460				
Ala	Ala	Leu	Lys	Asn	Phe	Thr	Pro	Ser	Glu	Thr	Pro	Thr	Met	Asp	Ile
465				470						475					480
Ala	Thr	Lys	Gly	Pro	Phe	Pro	Thr	Ser	Arg	Asp	Pro	Leu	Pro	Ser	Val
				485					490				495		
Pro	Pro	Thr	Thr	Thr	Asn	Ser	Ser	Arg	Gly	Thr	Asn	Ser	Thr	Leu	Ala
			500					505					510		
Lys	Ile	Thr	Thr	Ser	Ala	Lys	Thr	Thr	Met	Lys	Pro	Pro	Thr	Ala	Thr
		515					520					525			
Pro	Thr	Thr	Ala	Arg	Thr	Arg	Pro	Thr	Thr	Asp	Val	Ser	Ala	Gly	Glu
	530					535					540				
Asn	Gly	Gly	Phe	Leu	Leu	Leu	Arg	Leu	Ser	Val	Ala	Ser	Pro	Glu	Asp
545				550						555					560
Leu	Thr	Asp	Pro	Arg	Val	Ala	Glu	Arg	Leu	Met	Gln	Gln	Leu	His	Arg
				565				570					575		
Glu	Leu	His	Ala	His	Ala	Pro	His	Phe	Gln	Val	Ser	Leu	Leu	Arg	Val
			580					585					590		
Arg	Arg	Gly													

595

<210> 1341  
 <211> 114  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1341

Met Trp Asn Pro Trp Ile Ala Met Cys Leu Leu Gly Leu Ser Tyr Ser  
 1 5 10 15

Leu Leu Ala Cys Ala Leu Trp Pro Met Val Ala Phe Val Val Pro Glu  
 20 25 30

His Gln Leu Gly Thr Ala Tyr Gly Phe Met Gln Ser Ile Gln Asn Leu  
 35 40 45

Gly Leu Ala Ile Ile Ser Ile Ile Ala Gly Met Ile Leu Asp Ser Arg  
 50 55 60

Gly Tyr Leu Phe Leu Glu Val Phe Phe Ile Ala Cys Val Ser Leu Ser  
 65 70 75 80

Leu Leu Ser Val Val Leu Leu Tyr Leu Val Asn Arg Ala Gln Gly Gly  
 85 90 95

Asn Leu Asn Tyr Ser Ala Arg Gln Arg Glu Glu Ile Lys Phe Ser His  
 100 105 110

Thr Glu

<210> 1342  
 <211> 114  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1342

Met Trp Asn Pro Trp Ile Ala Met Cys Leu Leu Gly Leu Ser Tyr Ser  
 1 5 10 15

Leu Leu Ala Cys Ala Leu Trp Pro Met Val Ala Phe Val Val Pro Glu  
 20 25 30

His Gln Leu Gly Thr Ala Tyr Gly Phe Met Gln Ser Ile Gln Asn Leu  
 35 40 45

Gly Leu Ala Ile Ile Ser Ile Ile Ala Gly Met Ile Leu Asp Ser Arg  
 50 55 60

Gly Tyr Leu Phe Leu Glu Val Phe Phe Ile Ala Cys Val Ser Leu Ser  
 65 70 75 80

Leu Leu Ser Val Val Leu Leu Tyr Leu Val Asn Arg Ala Gln Gly Gly  
 85 90 95

Asn Leu Asn Tyr Ser Ala Arg Gln Arg Glu Glu Ile Lys Phe Ser His  
 100 105 110

Thr Glu

<210> 1343

<211> 114

<212> PRT

<213> Homo. sapiens

<400> 1343

Met Trp Asn Pro Trp Ile Ala Met Cys Leu Leu Gly Leu Ser Tyr Ser  
 1 5 10 15

Leu Leu Ala Cys Ala Leu Trp Pro Met Val Ala Phe Val Val Pro Glu  
 20 25 30

His Gln Leu Gly Thr Ala Tyr Gly Phe Met Gln Ser Ile Gln Asn Leu  
 35 40 45

Gly Leu Ala Ile Ile Ser Ile Ile Ala Gly Met Ile Leu Asp Ser Arg  
 50 55 60

Gly Tyr Leu Phe Leu Glu Val Phe Phe Ile Ala Cys Val Ser Leu Ser  
 65 70 75 80

Leu Leu Ser Val Val Leu Leu Tyr Leu Val Asn Arg Ala Gln Gly Gly  
 85 90 95

Asn Leu Asn Tyr Ser Ala Arg Gln Arg Glu Glu Ile Lys Phe Ser His  
 100 105 110

Thr Glu

<210> 1344

<211> 465

<212> PRT

<213> Homo sapiens

<400> 1344

Met Glu Glu Glu Asp Glu Glu Ala Arg Ala Leu Leu Ala Gly Gly Pro  
 1 5 10 15

Asp Glu Ala Asp Arg Gly Ala Pro Ala Ala Pro Gly Ala Leu Pro Ala  
 20 25 30

Leu Cys Asp Pro Ser Arg Leu Ala His Arg Leu Leu Val Leu Leu Leu  
 35 40 45

Met Cys Phe Leu Gly Phe Gly Ser Tyr Phe Cys Tyr Asp Asn Pro Ala  
 50 55 60

Ala Leu Gln Thr Gln Val Lys Arg Asp Met Gln Val Asn Thr Thr Lys  
 65 70 75 80

Phe Met Leu Leu Tyr Ala Trp Tyr Ser Trp Pro Asn Val Val Leu Cys  
                                     85                                    90                                    95  
 Phe Phe Gly Gly Phe Leu Ile Asp Arg Val Phe Gly Ile Arg Trp Gly  
                                     100                                    105                                    110  
 Thr Ile Ile Phe Ser Cys Phe Val Cys Ile Gly Gln Val Val Phe Ala  
                                     115                                    120                                    125  
 Leu Gly Gly Ile Phe Asn Ala Phe Trp Leu Met Glu Phe Gly Arg Phe  
                                     130                                    135                                    140  
 Val Phe Gly Ile Gly Gly Glu Ser Leu Ala Val Ala Gln Asn Thr Tyr  
                                     145                                    150                                    155                                    160  
 Ala Val Ser Trp Phe Lys Gly Lys Glu Leu Asn Leu Val Phe Gly Leu  
                                     165                                    170                                    175  
 Gln Leu Ser Met Ala Arg Ile Gly Ser Thr Val Asn Met Asn Leu Met  
                                     180                                    185                                    190  
 Gly Trp Leu Tyr Ser Lys Ile Glu Ala Leu Leu Gly Ser Ala Gly His  
                                     195                                    200                                    205  
 Thr Thr Leu Gly Ile Thr Leu Met Ile Gly Gly Ile Thr Cys Ile Leu  
                                     210                                    215                                    220  
 Ser Leu Ile Cys Ala Leu Ala Leu Ala Tyr Leu Asp Gln Arg Ala Glu  
                                     225                                    230                                    235                                    240  
 Arg Ile Leu His Lys Glu Gln Gly Lys Thr Gly Glu Val Ile Lys Leu  
                                     245                                    250                                    255  
 Thr Asp Val Lys Asp Phe Ser Leu Pro Leu Trp Leu Ile Phe Ile Ile  
                                     260                                    265                                    270  
 Cys Val Cys Tyr Tyr Val Ala Val Phe Pro Phe Ile Gly Leu Gly Lys  
                                     275                                    280                                    285  
 Val Phe Phe Thr Glu Lys Phe Gly Phe Ser Ser Gln Ala Ala Ser Ala  
                                     290                                    295                                    300  
 Ile Asn Ser Val Val Tyr Val Ile Ser Ala Pro Met Ser Pro Val Phe  
                                     305                                    310                                    315                                    320  
 Gly Leu Leu Val Asp Lys Thr Gly Lys Asn Ile Ile Trp Val Leu Cys  
                                     325                                    330                                    335  
 Ala Val Ala Ala Thr Leu Val Ser His Met Met Leu Ala Phe Thr Met  
                                     340                                    345                                    350  
 Trp Asn Pro Trp Ile Ala Met Cys Leu Leu Gly Leu Ser Tyr Ser Leu  
                                     355                                    360                                    365  
 Leu Ala Cys Ala Leu Trp Pro Met Val Ala Phe Val Val Pro Glu His  
                                     370                                    375                                    380  
 Gln Leu Gly Thr Ala Tyr Gly Phe Met Gln Ser Ile Gln Asn Leu Gly  
                                     385                                    390                                    395                                    400



Leu Ala Ile Ile Ser Ile Ile Ala Gly Met Ile Leu Asp Ser Arg Gly  
                     405                    410                    415  
 Tyr Leu Phe Leu Glu Val Phe Phe Ile Ala Cys Val Ser Leu Ser Leu  
                     420                    425                    430  
 Leu Ser Val Val Leu Leu Tyr Leu Val Asn Arg Ala Gln Gly Gly Asn  
                     435                    440                    445  
 Leu Asn Tyr Ser Ala Arg Gln Arg Glu Glu Ile Lys Phe Ser His Thr  
                     450                    455                    460  
 Glu  
 465

<210> 1345  
 <211> 83  
 <212> PRT  
 <213> Homo sapiens

<400> 1345  
 Met Gly Leu Lys Ala Leu Pro Glu Pro Phe Met Ser Leu Val Ser His  
   1                    5                    10                    15  
 Leu Leu Arg Thr Phe Phe Leu Val Trp Phe Val Gly Leu Pro Val Ala  
                     20                    25                    30  
 Ile Leu Gly Asn Leu Leu Glu Cys Tyr Ala Asn Val Phe Thr Gly Asn  
                     35                    40                    45  
 Gly Gly Gly Pro Glu Pro Trp Gly Gly His Leu Val Ser Glu Cys Leu  
                     50                    55                    60  
 Ala Leu Pro Gln Leu Gly Ile Gln Tyr Leu Ala Leu Ser Gly Gly Ile  
   65                    70                    75                    80  
 Ile Trp Leu

<210> 1346  
 <211> 73  
 <212> PRT  
 <213> Homo sapiens

<400> 1346  
 Met Ser Leu Val Ser His Leu Leu Arg Thr Phe Phe Leu Val Trp Phe  
   1                    5                    10                    15  
 Val Gly Leu Pro Val Ala Ile Leu Gly Asn Leu Leu Glu Cys Tyr Ala  
                     20                    25                    30  
 Asn Val Phe Thr Gly Asn Gly Gly Gly Pro Glu Pro Trp Gly Gly His  
                     35                    40                    45  
 Leu Val Ser Glu Cys Leu Ala Leu Pro Gln Leu Gly Ile Gln Tyr Leu

50 55 60

Ala Leu Ser Gly Gly Ile Ile Trp Leu  
65 70

<210> 1347  
<211> 83  
<212> PRT  
<213> Homo sapiens

<400> 1347  
Met Gly Leu Lys Ala Leu Pro Glu Pro Phe Met Ser Leu Val Ser His  
1 5 10 15  
Leu Leu Arg Thr Phe Phe Leu Val Trp Phe Val Gly Leu Pro Val Ala  
20 25 30  
Ile Leu Gly Asn Leu Leu Glu Cys Tyr Ala Asn Val Phe Thr Gly Asn  
35 40 45  
Gly Gly Gly Pro Glu Pro Trp Gly Gly His Leu Val Ser Glu Cys Leu  
50 55 60  
Ala Leu Pro Gln Leu Gly Ile Gln Tyr Leu Ala Leu Ser Gly Gly Ile  
65 70 75 80  
Ile Trp Leu

<210> 1348  
<211> 111  
<212> PRT  
<213> Homo sapiens

<400> 1348  
Met Phe Leu Ala Arg Val Pro Phe Leu Phe Thr Ile Val Pro Phe Ser  
1 5 10 15  
Val Leu Arg Ser Met Leu Ser Lys Val Val Arg Ser Thr Glu Gln Gly  
20 25 30  
Thr Leu Phe Ala Cys Ile Ala Phe Leu Glu Thr Leu Gly Gly Val Thr  
35 40 45  
Ala Val Ser Thr Phe Asn Gly Ile Tyr Ser Ala Thr Val Ala Trp Tyr  
50 55 60  
Pro Gly Phe Thr Phe Leu Leu Ser Ala Gly Leu Leu Leu Leu Pro Ala  
65 70 75 80  
Ile Ser Leu Cys Val Val Lys Cys Thr Ser Trp Asn Glu Gly Ser Tyr  
85 90 95  
Glu Leu Leu Ile Gln Glu Glu Ser Ser Glu Asp Ala Ser Asp Arg  
100 105 110

<210> 1349  
 <211> 111  
 <212> PRT  
 <213> Homo sapiens

<400> 1349

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Met Phe Leu Ala Arg Val Pro Phe Leu Phe Thr Ile Val Pro Phe Ser
 1             5             10             15

Val Leu Arg Ser Met Leu Ser Lys Val Val Arg Ser Thr Glu Gln Gly
      20             25             30

Thr Leu Phe Ala Cys Ile Ala Phe Leu Glu Thr Leu Gly Gly Val Thr
      35             40             45

Ala Val Ser Thr Phe Asn Gly Ile Tyr Ser Ala Thr Val Ala Trp Tyr
      50             55             60

Pro Gly Phe Thr Phe Leu Leu Ser Ala Gly Leu Leu Leu Leu Pro Ala
      65             70             75             80

Ile Ser Leu Cys Val Val Lys Cys Thr Ser Trp Asn Glu Gly Ser Tyr
      85             90             95

Glu Leu Leu Ile Gln Glu Glu Ser Ser Glu Asp Ala Ser Asp Arg
      100             105             110
  
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<210> 1350  
 <211> 230  
 <212> PRT  
 <213> Homo sapiens

<400> 1350

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Met Ser Cys Ser Glu Gly Phe Lys Asn Leu Phe Tyr Arg Thr Tyr Met
 1             5             10             15

Leu Phe Lys Asn Ala Ser Gly Lys Arg Arg Phe Leu Leu Cys Leu Leu
      20             25             30

Leu Phe Thr Val Ile Thr Tyr Phe Phe Val Val Ile Gly Ile Ala Pro
      35             40             45

Ile Phe Ile Leu Tyr Glu Leu Asp Ser Pro Leu Cys Trp Asn Glu Val
      50             55             60

Phe Ile Gly Tyr Gly Ser Ala Leu Gly Ser Ala Ser Phe Leu Thr Ser
      65             70             75             80

Phe Leu Gly Ile Trp Leu Phe Ser Tyr Cys Met Glu Asp Ile His Met
      85             90             95

Ala Phe Ile Gly Ile Phe Thr Thr Met Thr Gly Met Ala Met Thr Ala
      100             105             110

Phe Ala Ser Thr Thr Leu Met Met Phe Leu Ala Arg Val Pro Phe Leu
      115             120             125
  
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Phe Thr Ile Val Pro Phe Ser Val Leu Arg Ser Met Leu Ser Lys Val  
 130 135 140  
 Val Arg Ser Thr Glu Gln Gly Thr Leu Phe Ala Cys Ile Ala Phe Leu  
 145 150 155 160  
 Glu Thr Leu Gly Gly Val Thr Ala Val Ser Thr Phe Asn Gly Ile Tyr  
 165 170 175  
 Ser Ala Thr Val Ala Trp Tyr Pro Gly Phe Thr Phe Leu Leu Ser Ala  
 180 185 190  
 Gly Leu Leu Leu Leu Pro Ala Ile Ser Leu Cys Val Val Lys Cys Thr  
 195 200 205  
 Ser Trp Asn Glu Gly Ser Tyr Glu Leu Leu Ile Gln Glu Glu Ser Ser  
 210 215 220  
 Glu Asp Ala Ser Asp Arg  
 225 230

&lt;210&gt; 1351

&lt;211&gt; 137

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (111)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (116)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (123)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1351

Met Tyr Leu Gln Val Glu Thr Arg Thr Ser Ser Arg Leu His Leu Lys  
 1 5 10 15

Arg Ala Pro Gly Ile Arg Ser Trp Ser Leu Leu Val Gly Ile Leu Ser  
 20 25 30

Ile Gly Leu Ala Ala Ala Tyr Tyr Ser Gly Asp Ser Leu Gly Trp Lys  
 35 40 45

Leu Phe Tyr Val Thr Gly Cys Leu Phe Val Ala Val Gln Asn Leu Glu  
 50 55 60

Asp Trp Glu Glu Ala Ile Phe Asp Lys Ser Thr Gly Lys Val Val Leu  
 65 70 75 80

Lys Thr Phe Ser Leu Tyr Lys Lys Leu Leu Thr Leu Phe Arg Ala Gly  
                     85                    90                    95

His Asp Gln Val Val Val Leu Leu His Asp Val Arg Asp Val Xaa Val  
                     100                    105                    110

Glu Glu Glu Xaa Val Arg Tyr Phe Gly Lys Xaa Tyr Met Val Val Leu  
                     115                    120                    125

Arg Leu Ala Thr Gly Phe Phe His Pro  
                     130                    135

<210> 1352  
 <211> 124  
 <212> PRT  
 <213> Homo sapiens

<400> 1352  
 Met Tyr Leu Gln Val Glu Thr Arg Thr Ser Ser Arg Leu His Leu Lys  
     1                    5                    10                    15

Arg Ala Pro Gly Ile Arg Ser Trp Ser Leu Leu Val Gly Ile Leu Ser  
                     20                    25                    30

Ile Gly Leu Ala Ala Ala Tyr Tyr Ser Gly Asp Ser Leu Gly Trp Lys  
                     35                    40                    45

Leu Phe Tyr Val Thr Gly Cys Leu Phe Val Ala Val Gln Asn Leu Glu  
                     50                    55                    60

Asp Trp Glu Glu Ala Ile Phe Asp Lys Ser Thr Gly Lys Val Val Leu  
                     65                    70                    75                    80

Lys Thr Phe Ser Leu Tyr Lys Lys Leu Leu Thr Leu Phe Arg Ala Gly  
                     85                    90                    95

His Asp Gln Val Val Val Leu Leu His Asp Val Arg Ser Gly Cys Gln  
                     100                    105                    110

Ser Leu Val Ala Gly Gln Gly His His Asn His Lys  
                     115                    120

<210> 1353  
 <211> 145  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (123)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (135)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (137)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1353

Met Tyr Leu Gln Val Glu Thr Arg Thr Ser Ser Arg Leu His Leu Lys  
 1 5 10 15

Arg Ala Pro Gly Ile Arg Ser Trp Ser Leu Leu Val Gly Ile Leu Ser  
 20 25 30

Ile Gly Leu Ala Ala Ala Tyr Tyr Ser Gly Asp Ser Leu Gly Trp Lys  
 35 40 45

Leu Phe Tyr Val Thr Gly Cys Leu Phe Val Ala Val Gln Asn Leu Glu  
 50 55 60

Asp Trp Glu Glu Ala Ile Phe Asp Lys Ser Thr Gly Lys Val Val Leu  
 65 70 75 80

Lys Thr Phe Ser Leu Tyr Lys Lys Leu Leu Thr Leu Phe Arg Ala Gly  
 85 90 95

His Asp Gln Val Val Val Leu Leu His Asp Val Arg Asp Val Ser Val  
 100 105 110

Glu Glu Glu Lys Val Arg Tyr Phe Gly Lys Xaa Tyr Met Val Val Leu  
 115 120 125

Arg Leu Ala Thr Gly Phe Xaa His Xaa Leu Thr Gln Ser Ala Asp Met  
 130 135 140

Gly  
 145

&lt;210&gt; 1354

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (24)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (75)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1354

Met Phe Lys Asp Tyr Pro Pro Ala Ile Lys Pro Ser Tyr Asp Val Leu  
 1 5 10 15

Leu Leu Leu Leu Leu Leu Val Xaa Leu Leu Gln Ala Gly Leu Asn Thr  
 20 25 30

Gly Thr Ala Ile Gln Cys Val Arg Phe Lys Val Ser Ala Arg Leu Gln  
                   35                                  40                                  45

Gly Ala Ser Trp Asp Thr Gln Asn Gly Pro Gln Glu Arg Leu Ala Gly  
           50                                  55                                  60

Glu Val Ala Arg Ser Pro Leu Lys Glu Phe Xaa Lys Glu Lys Ala Trp  
       65                                  70                                  75                                  80

Arg Ala Val Val Val Gln Met Ala Gln  
                                   85

&lt;210&gt; 1355

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1355

Met Phe Lys Asp Tyr Pro Pro Ala Ile Lys Pro Ser Tyr Asp Val Leu  
       1                                  5                                  10                                  15

Leu Leu Leu Leu Leu Leu Val Leu Leu Leu Gln Ala Gly Leu Asn Thr  
                   20                                  25                                  30

Gly Thr Ala Ile Gln Cys Val Arg Phe Lys Val Ser Ala Arg Leu Gln  
                   35                                  40                                  45

Gly Ala Ser Trp Asp Thr Gln Asn Gly Pro Gln Glu Arg Leu Ala Gly  
           50                                  55                                  60

Glu Val Ala Arg Ser Pro Leu Lys Glu Phe Asp Lys Glu Lys Ala Trp  
       65                                  70                                  75                                  80

Arg Ala Val Val Val Gln Met Ala Gln  
                                   85

&lt;210&gt; 1356

&lt;211&gt; 419

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1356

Met Asn Asn Gln Lys Gln Gln Lys Pro Thr Leu Ser Gly Gln Arg Phe  
       1                                  5                                  10                                  15

Lys Thr Arg Lys Arg Asp Glu Lys Glu Arg Phe Asp Pro Thr Gln Phe  
                   20                                  25                                  30

Gln Asp Cys Ile Ile Gln Gly Leu Thr Glu Thr Gly Thr Asp Leu Glu  
           35                                  40                                  45

Ala Val Ala Lys Phe Leu Asp Ala Ser Gly Ala Lys Leu Asp Tyr Arg  
       50                                  55                                  60

Arg Tyr Ala Glu Thr Leu Phe Asp Ile Leu Val Ala Gly Gly Met Leu

65	70	75	80
Ala Pro Gly Gly Thr Leu Ala Asp Asp Met Met Arg Thr Asp Val Cys	85	90	95
Val Phe Ala Ala Gln Glu Asp Leu Glu Thr Met Gln Ala Phe Ala Gln	100	105	110
Val Phe Asn Lys Leu Ile Arg Arg Tyr Lys Tyr Leu Glu Lys Gly Phe	115	120	125
Glu Asp Glu Val Lys Lys Leu Leu Leu Phe Leu Lys Gly Phe Ser Glu	130	135	140
Ser Glu Arg Asn Lys Leu Ala Met Leu Thr Gly Val Leu Leu Ala Asn	145	150	155
Gly Thr Leu Asn Ala Ser Ile Leu Asn Ser Leu Tyr Asn Glu Asn Leu	165	170	175
Val Lys Glu Gly Val Ser Ala Ala Phe Ala Val Lys Leu Phe Lys Ser	180	185	190
Trp Ile Asn Glu Lys Asp Ile Asn Ala Val Ala Ala Ser Leu Arg Lys	195	200	205
Val Ser Met Asp Asn Arg Leu Met Glu Leu Phe Pro Ala Asn Lys Gln	210	215	220
Ser Val Glu His Phe Thr Lys Tyr Phe Thr Glu Ala Gly Leu Lys Glu	225	230	235
Leu Ser Glu Tyr Val Arg Asn Gln Gln Thr Ile Gly Ala Arg Lys Glu	245	250	255
Leu Gln Lys Glu Leu Gln Glu Gln Met Ser Arg Gly Asp Pro Phe Lys	260	265	270
Asp Ile Ile Leu Tyr Val Lys Glu Glu Met Lys Lys Asn Asn Ile Pro	275	280	285
Glu Pro Val Val Ile Gly Ile Val Trp Ser Ser Val Met Ser Thr Val	290	295	300
Glu Trp Asn Lys Lys Glu Glu Leu Val Ala Glu Gln Ala Ile Lys His	305	310	315
Leu Lys Gln Tyr Ser Pro Leu Leu Ala Ala Phe Thr Thr Gln Gly Gln	325	330	335
Ser Glu Leu Thr Leu Leu Leu Lys Ile Gln Glu Tyr Cys Tyr Asp Asn	340	345	350
Ile His Phe Met Lys Ala Phe Gln Lys Ile Val Val Leu Phe Tyr Lys	355	360	365
Ala Glu Val Leu Ser Glu Glu Pro Ile Leu Lys Trp Tyr Lys Asp Ala	370	375	380
His Val Ala Lys Gly Lys Ser Val Phe Leu Glu Gln Met Lys Lys Phe			



385                      390                      395                      400

Val Glu Trp Leu Lys Asn Ala Glu Glu Glu Ser Glu Ser Glu Ala Glu

                         405                      410                      415

Glu Gly Asp

<210> 1357

<211> 19

<212> PRT

<213> Homo sapiens

<400> 1357

Thr Ile Ala Cys Met Leu Thr Phe Cys Phe Val Leu Phe Cys Phe Val

1                      5                      10                      15

Leu His Phe

<210> 1358

<211> 857

<212> PRT

<213> Homo sapiens

<400> 1358

Met Ser Tyr Tyr Met Ala Asp Arg Lys His Arg Lys Ala Phe Leu Glu

1                      5                      10                      15

Ala Arg Gln Ser Leu Glu Val Lys Met Asn Leu Glu Glu Gln Ser Gln

                         20                      25                      30

Gln Gln Glu Asn Leu Met Leu Ser Ile Leu Pro Lys His Val Ala Asp

                         35                      40                      45

Glu Met Leu Lys Asp Met Lys Lys Asp Glu Ser Gln Lys Asp Gln Gln

                         50                      55                      60

Gln Phe Asn Thr Met Tyr Met Tyr Arg His Glu Asn Val Ser Ile Leu

                         65                      70                      75                      80

Phe Ala Asp Ile Val Gly Phe Thr Gln Leu Ser Ser Ala Cys Ser Ala

                         85                      90                      95

Gln Glu Leu Val Lys Leu Leu Asn Glu Leu Phe Ala Arg Phe Asp Lys

                         100                      105                      110

Leu Ala Ala Lys Tyr His Gln Leu Arg Ile Lys Ile Leu Gly Asp Cys

                         115                      120                      125

Tyr Tyr Cys Ile Cys Gly Leu Pro Asp Tyr Arg Glu Asp His Ala Val

                         130                      135                      140

Cys Ser Ile Leu Met Gly Leu Ala Met Val Glu Ala Ile Ser Tyr Val

145                      150                      155                      160

Arg Glu Lys Thr Lys Thr Gly Val Asp Met Arg Val Gly Val His Thr  
 165 170 175  
 Gly Thr Val Leu Gly Gly Val Leu Gly Gln Lys Arg Trp Gln Tyr Asp  
 180 185 190  
 Val Trp Ser Thr Asp Val Thr Val Ala Asn Lys Met Glu Ala Gly Gly  
 195 200 205  
 Ile Pro Gly Arg Val His Ile Ser Gln Ser Thr Met Asp Cys Leu Lys  
 210 215 220  
 Gly Glu Phe Asp Val Glu Pro Gly Asp Gly Gly Ser Arg Cys Asp Tyr  
 225 230 235 240  
 Leu Glu Glu Lys Gly Ile Glu Thr Tyr Leu Ile Ile Ala Ser Lys Pro  
 245 250 255  
 Glu Val Lys Lys Thr Ala Thr Gln Asn Gly Leu Asn Gly Ser Ala Leu  
 260 265 270  
 Pro Asn Gly Ala Pro Ala Ser Ser Lys Ser Ser Ser Pro Ala Leu Ile  
 275 280 285  
 Glu Thr Lys Glu Pro Asn Gly Ser Ala His Ser Ser Gly Ser Thr Ser  
 290 295 300  
 Glu Lys Pro Glu Glu Gln Asp Ala Gln Ala Asp Asn Pro Ser Phe Pro  
 305 310 315 320  
 Asn Pro Arg Arg Arg Leu Arg Leu Gln Asp Leu Ala Asp Arg Val Val  
 325 330 335  
 Asp Ala Ser Glu Asp Glu His Glu Leu Asn Gln Leu Leu Asn Glu Ala  
 340 345 350  
 Leu Leu Glu Arg Glu Ser Ala Gln Val Val Lys Lys Arg Asn Thr Phe  
 355 360 365  
 Leu Leu Ser Met Arg Phe Met Asp Pro Glu Met Glu Thr Arg Tyr Ser  
 370 375 380  
 Val Glu Lys Glu Lys Gln Ser Gly Ala Ala Phe Ser Cys Ser Cys Val  
 385 390 395 400  
 Val Leu Leu Cys Thr Ala Leu Val Glu Ile Leu Ile Asp Pro Trp Leu  
 405 410 415  
 Met Thr Asn Tyr Val Thr Phe Met Val Gly Glu Ile Leu Leu Leu Ile  
 420 425 430  
 Leu Thr Ile Cys Ser Leu Ala Ala Ile Phe Pro Arg Ala Phe Pro Lys  
 435 440 445  
 Lys Leu Val Ala Phe Ser Thr Trp Ile Asp Arg Thr Arg Trp Ala Arg  
 450 455 460  
 Asn Thr Trp Ala Met Leu Ala Ile Phe Ile Leu Val Met Ala Asn Val  
 465 470 475 480

Val Asp Met Val Ser His Met Val Lys Leu Thr Leu Met Leu Leu Val  
 485 490 495  
 Ala Gly Ala Val Ala Thr Ile Asn Leu Tyr Ala Trp Arg Pro Val Phe  
 500 505 510  
 Asp Glu Tyr Asp His Lys Arg Phe Arg Glu His Asp Leu Pro Met Val  
 515 520 525  
 Ala Leu Glu Gln Met Gln Gly Phe Asn Pro Gly Leu Asn Gly Thr Asp  
 530 535 540  
 Arg Leu Pro Leu Val Pro Ser Lys Tyr Ser Met Thr Val Met Val Phe  
 545 550 555 560  
 Leu Met Met Leu Ser Phe Tyr Tyr Phe Ser Arg His Val Glu Lys Leu  
 565 570 575  
 Ala Arg Thr Leu Phe Leu Trp Lys Ile Glu Val His Asp Gln Lys Glu  
 580 585 590  
 Arg Val Tyr Glu Met Arg Arg Trp Asn Glu Ala Leu Val Thr Asn Met  
 595 600 605  
 Leu Pro Glu His Val Ala Arg His Phe Leu Gly Ser Lys Lys Arg Asp  
 610 615 620  
 Glu Glu Leu Tyr Ser Gln Thr Tyr Asp Glu Ile Gly Val Met Phe Ala  
 625 630 635 640  
 Ser Leu Pro Asn Phe Ala Asp Phe Tyr Thr Glu Glu Ser Ile Asn Asn  
 645 650 655  
 Gly Gly Ile Glu Cys Leu Arg Phe Leu Asn Glu Ile Ile Ser Asp Phe  
 660 665 670  
 Asp Ser Leu Leu Asp Asn Pro Lys Phe Arg Val Ile Thr Lys Ile Lys  
 675 680 685  
 Thr Ile Gly Ser Thr Tyr Met Ala Ala Ser Gly Val Thr Pro Asp Val  
 690 695 700  
 Asn Thr Asn Gly Phe Ala Ser Ser Asn Lys Glu Asp Lys Ser Glu Arg  
 705 710 715 720  
 Glu Arg Trp Gln His Leu Ala Asp Leu Ala Asp Phe Ala Leu Ala Met  
 725 730 735  
 Lys Asp Thr Leu Thr Asn Ile Asn Asn Gln Ser Phe Asn Asn Phe Met  
 740 745 750  
 Leu Arg Ile Gly Met Asn Lys Gly Gly Val Leu Ala Gly Val Ile Gly  
 755 760 765  
 Ala Arg Lys Pro His Tyr Asp Ile Trp Gly Asn Thr Val Asn Val Ala  
 770 775 780  
 Ser Arg Met Glu Ser Thr Gly Val Met Gly Asn Ile Gln Val Val Glu  
 785 790 795 800

Glu Thr Gln Val Ile Leu Arg Glu Tyr Gly Phe Arg Phe Val Arg Arg  
                             805                            810                            815

Gly Pro Ile Phe Val Lys Gly Lys Gly Glu Leu Leu Thr Phe Phe Leu  
                             820                            825                            830

Lys Gly Arg Asp Lys Leu Ala Thr Phe Pro Asn Gly Pro Ser Val Thr  
                             835                            840                            845

Leu Pro His Gln Val Val Asp Asn Ser  
                             850                            855

<210> 1359  
 <211> 188  
 <212> PRT  
 <213> Homo sapiens

<400> 1359  
 Met Val Pro Gly Ala Ala Gly Trp Cys Cys Leu Val Leu Trp Leu Pro  
   1                            5                            10                            15

Ala Cys Val Ala Ala His Gly Phe Arg Ile His Asp Tyr Leu Tyr Phe  
                             20                            25                            30

Gln Val Leu Ser Pro Gly Asp Ile Arg Tyr Ile Phe Thr Ala Thr Pro  
                             35                            40                            45

Ala Lys Asp Phe Gly Gly Ile Phe His Thr Arg Tyr Glu Gln Ile His  
                             50                            55                            60

Leu Val Pro Ala Glu Pro Pro Glu Ala Cys Gly Glu Leu Ser Asn Gly  
   65                            70                            75                            80

Phe Phe Ile Gln Asp Gln Ile Ala Leu Val Glu Arg Gly Gly Cys Ser  
                             85                            90                            95

Phe Leu Ser Lys Thr Arg Val Val Gln Glu His Gly Gly Arg Ala Val  
                             100                            105                            110

Ile Ile Ser Asp Asn Ala Val Asp Asn Asp Ser Phe Tyr Val Glu Met  
                             115                            120                            125

Ile Gln Asp Ser Thr Gln Arg Thr Ala Asp Ile Pro Ala Leu Phe Leu  
                             130                            135                            140

Leu Gly Arg Asp Gly Tyr Met Ile Arg Arg Ser Leu Glu Gln His Gly  
   145                            150                            155                            160

Leu Pro Trp Ala Ile Ile Ser Ile Pro Val Asn Val Thr Ser Ile Pro  
                             165                            170                            175

Thr Phe Glu Leu Leu Gln Pro Pro Trp Thr Phe Trp  
                             180                            185

<210> 1360  
 <211> 188

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1360

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Met Val Pro Gly Ala Ala Gly Trp Cys Cys Leu Val Leu Trp Leu Pro
 1              5              10              15

Ala Cys Val Ala Ala His Gly Phe Arg Ile His Asp Tyr Leu Tyr Phe
              20              25              30

Gln Val Leu Ser Pro Gly Asp Ile Arg Tyr Ile Phe Thr Ala Thr Pro
              35              40              45

Ala Lys Asp Phe Gly Gly Ile Phe His Thr Arg Tyr Glu Gln Ile His
 50              55              60

Leu Val Pro Ala Glu Pro Pro Glu Ala Cys Gly Glu Leu Ser Asn Gly
 65              70              75              80

Phe Phe Ile Gln Asp Gln Ile Ala Leu Val Glu Arg Gly Gly Cys Ser
              85              90              95

Phe Leu Ser Lys Thr Arg Val Val Gln Glu His Gly Gly Arg Ala Val
              100              105              110

Ile Ile Ser Asp Asn Ala Val Asp Asn Asp Ser Phe Tyr Val Glu Met
              115              120              125

Ile Gln Asp Ser Thr Gln Arg Thr Ala Asp Ile Pro Ala Leu Phe Leu
              130              135              140

Leu Gly Arg Asp Gly Tyr Met Ile Arg Arg Ser Leu Glu Gln His Gly
145              150              155              160

Leu Pro Trp Ala Ile Ile Ser Ile Pro Val Asn Val Thr Ser Ile Pro
              165              170              175

Thr Phe Glu Leu Leu Gln Pro Pro Trp Thr Phe Trp
              180              185

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&lt;210&gt; 1361

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (28)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (90)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1361

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Met Arg Lys Ile His Thr Pro Leu Phe Asn Leu Leu Gln Val Arg Leu
 1              5              10              15

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Gly Phe Val Tyr Phe Pro Cys Phe Thr Phe Pro Xaa Val Gln Ala Val  
                   20                                  25                                  30  
 Val Glu Thr Gly Thr Gln Gly Leu Cys Val Ala Pro Cys Ser Ser Cys  
                   35                                  40                                  45  
 Leu Gln Glu Ala Cys Gly Ala Leu Val Ser Leu Ala Ser Cys Pro Pro  
                   50                                  55                                  60  
 Phe Leu Leu Pro Pro Leu Thr Leu Pro Pro Thr Leu Ser Leu Arg Thr  
                   65                                  70                                  75                                  80  
 Ser Ser Trp Lys Gly Leu Ala Arg Ala Xaa Val Leu Ala Ser Leu Trp  
                                   85                                  90                                  95  
 Gly Gly Arg Leu Cys Gly Leu Lys Gly Cys Arg Leu Lys Leu Gln Gly  
                   100                                  105                                  110  
 Val Gly Ala Trp  
                   115

&lt;210&gt; 1362

&lt;211&gt; 167

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1362

Met Arg Lys Ile His Thr Pro Leu Phe Asn Leu Leu Gln Val Arg Leu  
                   1                                  5                                  10                                  15  
 Gly Phe Val Tyr Phe Pro Cys Phe Thr Phe Pro Cys Val Gln Ala Val  
                   20                                  25                                  30  
 Val Glu Thr Gly Thr Gln Gly Leu Cys Val Ala Pro Cys Ser Ser Cys  
                   35                                  40                                  45  
 Leu Gln Glu Ala Cys Gly Ala Leu Val Ser Leu Ala Ser Cys Pro Pro  
                   50                                  55                                  60  
 Phe Leu Leu Pro Pro Leu Thr Leu Pro Pro Thr Leu Ser Leu Arg Thr  
                   65                                  70                                  75                                  80  
 Ser Ser Trp Lys Gly Leu Ala Arg Ala Cys Val Leu Ala Ser Leu Trp  
                                   85                                  90                                  95  
 Gly Gly Arg Leu Cys Gly Leu Lys Gly Cys Arg Leu Lys Leu Gln Gly  
                   100                                  105                                  110  
 Val Gly Ala Trp Glu Gly Met Cys Thr Ala Leu Leu Thr Asp Pro Phe  
                   115                                  120                                  125  
 Met Phe Ser Phe Phe Asp Ser Val Leu Cys Cys Pro Asp Gly Gly Val  
                   130                                  135                                  140  
 Ser Pro Cys Leu Leu Pro Phe Leu Pro Trp Thr Leu Ala Ile Gly Pro  
                   145                                  150                                  155                                  160

Asp Glu Arg Val His Val Val  
165

<210> 1363

<211> 286

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (204)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (224)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (228)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (264)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (271)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1363

Met Tyr Leu Ser Ala Leu Gln Ser Leu Ile Pro Ser Leu Phe Ala Leu  
1 5 10 15

Val Leu Gln Asn Ala Pro Phe Ser Ser Lys Ala Lys Leu His Gly Glu  
20 25 30

Val Pro Gln Ile Glu Val Thr Arg Phe Pro Arg Pro Met Ser Pro Leu  
35 40 45

Gln Asp Val Ser Thr Ile Ile Gly Ser Arg Glu Gln Leu Ala Val Leu  
50 55 60

Leu Gln Leu Tyr Asp Tyr Gln Leu Glu Gln Glu Gly Thr Thr Gly Trp  
65 70 75 80

Glu Ser Leu Leu Trp Val Val Asn Gln Leu Leu Pro Gln Leu Ile Glu  
85 90 95

Ile Val Gly Lys Ile Asn Val Thr Ser Thr Ala Cys Val His Glu Phe  
100 105 110

Ser Arg Phe Phe Trp Arg Leu Cys Arg Thr Phe Gly Lys Ile Phe Thr  
115 120 125

Asn Thr Lys Val Lys Pro Gln Phe Gln Glu Ile Leu Arg Leu Ser Glu  
 130 135 140  
 Glu Asn Ile Asp Ser Ser Ala Gly Asn Gly Val Leu Thr Lys Ala Thr  
 145 150 155 160  
 Val Pro Ile Tyr Ala Thr Gly Val Leu Thr Cys Tyr Ile Gln Glu Glu  
 165 170 175  
 Asp Arg Lys Leu Leu Val Gly Phe Leu Glu Asp Val Met Thr Leu Leu  
 180 185 190  
 Ser Leu Ser His Ala Pro Leu Asp Ser Leu Lys Xaa Ser Phe Val Glu  
 195 200 205  
 Leu Gly Ala Asn Gln Ala Tyr His Glu Leu Leu Leu Thr Val Leu Xaa  
 210 215 220  
 Tyr Gly Val Xaa His Thr Ser Ala Leu Val Arg Cys Thr Ala Ala Arg  
 225 230 235 240  
 Met Phe Glu Leu Leu Val Lys Gly Val Asn Glu Thr Leu Val Ala Gln  
 245 250 255  
 Arg Val Val Pro Ala Leu His Xaa Leu Ser Pro Val Asp Pro Xaa Asn  
 260 265 270  
 Leu Cys Gln Asp Cys His Asn Phe Gln Pro Leu Gly Leu Phe  
 275 280 285

&lt;210&gt; 1364

&lt;211&gt; 283

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1364

Met Tyr Leu Ser Ala Leu Gln Ser Leu Ile Pro Ser Leu Phe Ala Leu  
 1 5 10 15  
 Val Leu Gln Asn Ala Pro Phe Ser Ser Lys Ala Lys Leu His Gly Glu  
 20 25 30  
 Val Pro Gln Ile Glu Val Thr Arg Phe Pro Arg Pro Met Ser Pro Leu  
 35 40 45  
 Gln Asp Val Ser Thr Ile Ile Gly Ser Arg Glu Gln Leu Ala Val Leu  
 50 55 60  
 Leu Gln Leu Tyr Asp Tyr Gln Leu Glu Gln Glu Gly Thr Thr Gly Trp  
 65 70 75 80  
 Glu Ser Leu Leu Trp Val Val Asn Gln Leu Leu Pro Gln Leu Ile Glu  
 85 90 95  
 Ile Val Gly Lys Ile Asn Val Thr Ser Thr Ala Cys Val His Glu Phe  
 100 105 110  
 Ser Arg Phe Phe Trp Arg Leu Cys Arg Thr Phe Gly Lys Ile Phe Thr



115	120	125
Asn Thr Lys Val Lys Pro Gln Phe Gln Glu Ile Leu Arg Leu Ser Glu		
130	135	140
Glu Asn Ile Asp Ser Ser Ala Gly Asn Gly Val Leu Thr Lys Ala Thr		
145	150	155
Val Pro Ile Tyr Ala Thr Gly Val Leu Thr Cys Tyr Ile Gln Glu Glu		
165	170	175
Asp Arg Lys Leu Leu Val Gly Phe Leu Glu Asp Val Met Thr Leu Leu		
180	185	190
Ser Leu Ser His Ala Pro Leu Asp Ser Leu Lys Ala Ser Phe Val Glu		
195	200	205
Leu Gly Ala Asn Pro Ala Tyr His Glu Leu Leu Leu Thr Val Leu Trp		
210	215	220
Tyr Gly Val Val His Thr Ser Ala Leu Val Arg Cys Thr Ala Ala Arg		
225	230	235
Met Phe Glu Val Cys Gln His Met Pro Leu Leu Val Ser Ile Ile Met		
245	250	255
Ile Phe Phe Phe Leu Arg Arg Arg Arg Glu Phe Phe Leu Ile Lys Arg		
260	265	270
Leu Cys Ile Ser Lys Lys Lys Lys Lys Lys Lys		
275	280	

&lt;210&gt; 1365

&lt;211&gt; 379

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (283)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (303)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (307)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1365

Met Gly Tyr Ile Asp Asp Pro Asp Lys Tyr His Gln Gly Phe Glu Leu
1 5 10 15

Leu Leu Ser Ala Leu Gly Asp Pro Ser Glu Arg Val Val Ser Ala Thr
20 25 30

His Gln Val Phe Leu Pro Ala Tyr Ala Ala Trp Thr Thr Glu Leu Gly  
 35 40 45  
 Asn Leu Gln Ser His Leu Ile Leu Thr Leu Leu Asn Lys Ile Glu Lys  
 50 55 60  
 Leu Leu Arg Glu Gly Glu His Gly Leu Asp Glu His Lys Leu His Met  
 65 70 75 80  
 Tyr Leu Ser Ala Leu Gln Ser Leu Ile Pro Ser Leu Phe Ala Leu Val  
 85 90 95  
 Leu Gln Asn Ala Pro Phe Ser Ser Lys Ala Lys Leu His Gly Glu Val  
 100 105 110  
 Pro Gln Ile Glu Val Thr Arg Phe Pro Arg Pro Met Ser Pro Leu Gln  
 115 120 125  
 Asp Val Ser Thr Ile Ile Gly Ser Arg Glu Gln Leu Ala Val Leu Leu  
 130 135 140  
 Gln Leu Tyr Asp Tyr Gln Leu Glu Gln Glu Gly Thr Thr Gly Trp Glu  
 145 150 155 160  
 Ser Leu Leu Trp Val Val Asn Gln Leu Leu Pro Gln Leu Ile Glu Ile  
 165 170 175  
 Val Gly Lys Ile Asn Val Thr Ser Thr Ala Cys Val His Glu Phe Ser  
 180 185 190  
 Arg Phe Phe Trp Arg Leu Cys Arg Thr Phe Gly Lys Ile Phe Thr Asn  
 195 200 205  
 Thr Lys Val Lys Pro Gln Phe Gln Glu Ile Leu Arg Leu Ser Glu Glu  
 210 215 220  
 Asn Ile Asp Ser Ser Ala Gly Asn Gly Val Leu Thr Lys Ala Thr Val  
 225 230 235 240  
 Pro Ile Tyr Ala Thr Gly Val Leu Thr Cys Tyr Ile Gln Glu Glu Asp  
 245 250 255  
 Arg Lys Leu Leu Val Gly Phe Leu Glu Asp Val Met Thr Leu Leu Ser  
 260 265 270  
 Leu Ser His Ala Pro Leu Asp Ser Leu Lys Xaa Ser Phe Val Glu Leu  
 275 280 285  
 Gly Ala Asn Gln Ala Tyr His Glu Leu Leu Leu Thr Val Leu Xaa Tyr  
 290 295 300  
 Gly Val Xaa His Thr Ser Ala Leu Val Arg Cys Thr Ala Ala Arg Met  
 305 310 315 320  
 Phe Glu Leu Leu Val Lys Gly Val Asn Glu Thr Leu Val Ala Gln Arg  
 325 330 335  
 Val Val Pro Ala Leu Ile Thr Leu Ser Ser Asp Pro Glu Ile Ser Val  
 340 345 350

Arg Ile Ala Thr Ile Pro Ala Phe Gly Thr Ile Met Glu Thr Val Ile  
 355 360 365

Gln Arg Glu Leu Leu Glu Arg Val Lys Met Gln  
 370 375

<210> 1366

<211> 156

<212> PRT

<213> Homo sapiens

<400> 1366

Met Pro Ala Leu Leu Pro Val Ala Ser Arg Leu Leu Leu Leu Pro Arg  
 1 5 10 15

Val Leu Leu Thr Met Ala Ser Gly Ser Pro Pro Thr Gln Pro Ser Pro  
 20 25 30

Ala Ser Asp Ser Gly Ser Gly Tyr Val Pro Gly Ser Val Ser Ala Ala  
 35 40 45

Phe Val Thr Cys Pro Asn Glu Lys Val Ala Lys Glu Ile Ala Arg Ala  
 50 55 60

Val Val Glu Lys Arg Leu Ala Ala Cys Val Asn Leu Ile Pro Gln Ile  
 65 70 75 80

Thr Ser Ile Tyr Glu Trp Lys Gly Lys Ile Glu Glu Asp Ser Glu Val  
 85 90 95

Leu Met Met Ile Lys Thr Gln Ser Ser Leu Val Pro Ala Leu Thr Asp  
 100 105 110

Phe Val Arg Ser Val His Pro Tyr Glu Val Ala Glu Val Ile Ala Leu  
 115 120 125

Pro Val Glu Gln Gly Asn Phe Pro Tyr Leu Gln Trp Val Arg Gln Val  
 130 135 140

Thr Glu Ser Val Ser Asp Ser Ile Thr Val Leu Pro  
 145 150 155

<210> 1367

<211> 156

<212> PRT

<213> Homo sapiens

<400> 1367

Met Pro Ala Leu Leu Pro Val Ala Ser Arg Leu Leu Leu Leu Pro Arg  
 1 5 10 15

Val Leu Leu Thr Met Ala Ser Gly Ser Pro Pro Thr Gln Pro Ser Pro  
 20 25 30

Ala Ser Asp Ser Gly Ser Gly Tyr Val Pro Gly Ser Val Ser Ala Ala

35                                      40                                      45  
 Phe Val Thr Cys Pro Asn Glu Lys Val Ala Lys Glu Ile Ala Arg Ala  
     50                                      55                                      60  
 Val Val Glu Lys Arg Leu Ala Ala Cys Val Asn Leu Ile Pro Gln Ile  
     65                                      70                                      75                                      80  
 Thr Ser Ile Tyr Glu Trp Lys Gly Lys Ile Glu Glu Asp Ser Glu Val  
                                     85                                      90                                      95  
 Leu Met Met Ile Lys Thr Gln Ser Ser Leu Val Pro Ala Leu Thr Asp  
                                     100                                      105                                      110  
 Phe Val Arg Ser Val His Pro Tyr Glu Val Ala Glu Val Ile Ala Leu  
                                     115                                      120                                      125  
 Pro Val Glu Gln Gly Asn Phe Pro Tyr Leu Gln Trp Val Arg Gln Val  
                                     130                                      135                                      140  
 Thr Glu Ser Val Ser Asp Ser Ile Thr Val Leu Pro  
     145                                      150                                      155

&lt;210&gt; 1368

&lt;211&gt; 442

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (164)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (247)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1368

Met Trp Arg Leu Pro Gly Leu Leu Gly Arg Ala Leu Pro Arg Thr Leu  
     1                                      5                                      10                                      15

Gly Pro Ser Leu Trp Arg Val Thr Pro Lys Ser Thr Ser Pro Asp Gly  
                                     20                                      25                                      30

Pro Gln Thr Thr Ser Ser Thr Leu Leu Val Pro Val Pro Asn Leu Asp  
                                     35                                      40                                      45

Arg Ser Gly Pro His Gly Pro Gly Thr Ser Gly Gly Pro Arg Ser His  
     50                                      55                                      60

Gly Trp Lys Asp Ala Phe Gln Trp Met Ser Ser Arg Val Ser Pro Asn  
     65                                      70                                      75                                      80

Thr Leu Trp Asp Ala Ile Ser Trp Gly Thr Leu Ala Val Leu Ala Leu  
                                     85                                      90                                      95

Gln Leu Ala Arg Gln Ile His Phe Gln Ala Ser Leu Pro Ala Gly Pro

100										105					110				
Gln	Arg	Val	Glu	His	Cys	Ser	Trp	His	Ser	Pro	Leu	Asp	Arg	Phe	Phe				
		115					120					125							
Ser	Ser	Pro	Leu	Trp	His	Pro	Cys	Ser	Ser	Leu	Arg	Gln	His	Ile	Leu				
		130				135					140								
Pro	Ser	Pro	Asp	Gly	Pro	Ala	Pro	Arg	His	Thr	Gly	Leu	Arg	Glu	Pro				
145					150					155					160				
Arg	Leu	Gly	Xaa	Glu	Glu	Ala	Ser	Ala	Gln	Pro	Arg	Asn	Phe	Ser	His				
				165					170					175					
Asn	Ser	Leu	Arg	Gly	Ala	Arg	Pro	Gln	Asp	Pro	Ser	Glu	Glu	Gly	Pro				
			180					185					190						
Gly	Asp	Phe	Gly	Phe	Leu	His	Ala	Ser	Ser	Ser	Ile	Glu	Ser	Glu	Ala				
		195					200					205							
Lys	Pro	Ala	Gln	Pro	Gln	Pro	Thr	Gly	Glu	Lys	Glu	Gln	Asp	Lys	Ser				
	210					215					220								
Lys	Thr	Leu	Ser	Leu	Glu	Glu	Ala	Val	Thr	Ser	Ile	Gln	Gln	Leu	Phe				
225					230					235					240				
Gln	Leu	Ser	Val	Ser	Ile	Xaa	Phe	Asn	Phe	Leu	Gly	Thr	Glu	Asn	Met				
				245					250					255					
Lys	Ser	Gly	Asp	His	Thr	Ala	Ala	Phe	Ser	Tyr	Phe	Gln	Lys	Ala	Ala				
			260					265					270						
Ala	Arg	Gly	Tyr	Ser	Lys	Ala	Gln	Tyr	Asn	Ala	Gly	Leu	Cys	His	Glu				
		275					280					285							
His	Gly	Arg	Gly	Thr	Pro	Arg	Asp	Ile	Ser	Lys	Ala	Val	Leu	Tyr	Tyr				
	290					295					300								
Gln	Leu	Ala	Ala	Ser	Gln	Gly	His	Ser	Leu	Ala	Gln	Tyr	Arg	Tyr	Ala				
305					310					315					320				
Arg	Cys	Leu	Leu	Arg	Asp	Pro	Ala	Ser	Ser	Trp	Asn	Pro	Glu	Arg	Gln				
				325					330					335					
Arg	Ala	Val	Ser	Leu	Leu	Lys	Gln	Ala	Ala	Asp	Ser	Gly	Leu	Arg	Glu				
			340					345					350						
Ala	Gln	Ala	Phe	Leu	Gly	Val	Leu	Phe	Thr	Lys	Glu	Pro	Tyr	Leu	Asp				
		355					360					365							
Glu	Gln	Arg	Ala	Val	Lys	Tyr	Leu	Trp	Leu	Ala	Ala	Asn	Asn	Gly	Asp				
	370					375					380								
Ser	Gln	Ser	Arg	Tyr	His	Leu	Gly	Ile	Cys	Tyr	Glu	Lys	Gly	Leu	Gly				
385					390					395					400				
Val	Gln	Arg	Asn	Leu	Gly	Glu	Ala	Leu	Arg	Cys	Tyr	Gln	Gln	Ser	Ala				
			405					410						415					
Ala	Leu	Gly	Asn	Glu	Ala	Ala	Gln	Glu	Arg	Leu	Arg	Ala	Leu	Phe	Ser				

420

425

430

Met Gly Ala Ala Ala Gly Gly Pro Ala Thr  
 435 440

&lt;210&gt; 1369

&lt;211&gt; 84

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1369

Met Gly Leu Arg Leu Pro Pro Pro Leu Cys Trp Phe Leu Cys Leu Thr  
 1 5 10 15

Ser Thr Gly Gln Val Pro Met Ala Gln Ala Arg Ala Gly Val Gln Gly  
 20 25 30

Pro Met Asp Gly Arg Met Pro Ser Asn Gly Cys Leu Pro Val Ser Pro  
 35 40 45

Arg Thr Pro Tyr Gly Met Pro Tyr Leu Gly Ala Leu Trp Pro Cys Trp  
 50 55 60

Pro Cys Ser Trp Gln Gly Arg Ser Thr Ser Arg His Pro Cys Gln Gln  
 65 70 75 80

Asp Leu Ser Gly

&lt;210&gt; 1370

&lt;211&gt; 129

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1370

Met Val Gly Val Gln Ile Trp Thr Leu Thr Cys Cys Val Ile Leu Val  
 1 5 10 15

Val Val Leu Pro Phe Ser Val Pro His Ser Leu Ile Cys Arg Met Gly  
 20 25 30

Leu Ile Ala Thr Ser Val Leu Gln Gly His Gly Lys Ser Lys Met Ile  
 35 40 45

Asn Ala Thr Val Cys Leu Ala Leu Gly Leu Pro Arg Val Pro Arg Glu  
 50 55 60

Asp Gln Leu Ile Val Ser Leu Asp Pro Gln Ser Ser Glu Ser Ala Ser  
 65 70 75 80

Leu Glu Ala Leu Leu Lys Tyr Ser Phe Leu Gly Pro Pro Ser Leu Phe  
 85 90 95

Pro Ile Gln Trp Ser Gly Leu Gly Leu Ser Ile Ser Val Ser Tyr Gln  
 100 105 110

Phe Gln Val Thr Leu Val Pro Leu Ala Trp Gly Pro Asn Ser Gln Asp  
 115 120 125

Pro

<210> 1371  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (1)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (2)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (52)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (53)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1371  
 Xaa Xaa Asp Thr Gln Gly Arg Val Arg Gly Arg His Glu Glu Trp Gly  
 1 5 10 15  
 Gly Arg Arg Trp Arg Lys Glu Gly Ser Glu Gln Arg Ala Pro Gly Met  
 20 25 30  
 Ala Trp Lys Arg Leu Ser Pro Trp Ile Leu Trp Val Gly Ala Ser Gly  
 35 40 45  
 Leu Thr Ser Xaa Xaa  
 50

<210> 1372  
 <211> 129  
 <212> PRT  
 <213> Homo sapiens

<400> 1372  
 Met Val Gly Val Gln Ile Trp Thr Leu Thr Cys Cys Val Ile Leu Val  
 1 5 10 15  
 Val Val Leu Pro Phe Ser Val Pro His Ser Leu Ile Cys Arg Met Gly  
 20 25 30

Leu Ile Ala Thr Ser Val Leu Gln Gly His Gly Lys Ser Lys Met Ile  
           35                          40                          45  
 Asn Ala Thr Val Cys Leu Ala Leu Gly Leu Pro Arg Val Pro Arg Glu  
           50                          55                          60  
 Asp Gln Leu Ile Val Ser Leu Asp Pro Gln Ser Ser Glu Ser Ala Ser  
           65                          70                          75                          80  
 Leu Glu Ala Leu Leu Lys Tyr Ser Phe Leu Gly Pro Pro Ser Leu Phe  
                           85                          90                          95  
 Pro Ile Gln Trp Ser Gly Leu Gly Leu Ser Ile Ser Val Ser Tyr Gln  
                           100                          105                          110  
 Phe Gln Val Thr Leu Val Pro Leu Ala Trp Gly Pro Asn Ser Gln Asp  
           115                          120                          125  
 Pro

&lt;210&gt; 1373

&lt;211&gt; 117

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (114)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1373

Met Gly Phe Leu Phe Leu Leu Gly Leu Tyr Ile Ser Ser Leu Ala Ser  
           1                          5                          10                          15

Cys Met Gly Gly Leu Tyr Gly Ala Pro Arg Ile Leu Gln Cys Ile Ala  
                           20                          25                          30

Gln Glu Lys Val Ile Pro Ala Leu Ala Cys Leu Gly Gln Gly Lys Gly  
           35                          40                          45

Pro Asn Lys Thr Pro Val Ala Ala Ile Cys Leu Thr Ser Leu Val Thr  
           50                          55                          60

Met Ala Phe Val Phe Val Gly Gln Val Asn Val Leu Ala Pro Ile Val  
           65                          70                          75                          80

Thr Ile Asn Phe Met Leu Thr Tyr Val Ala Val Asp Tyr Ser Tyr Phe  
                           85                          90                          95

Ser Leu Ser Met Cys Ser Cys Ser Leu Thr Pro Val Pro Glu Pro Val  
                           100                          105                          110

Leu Xaa Glu Gly Ala  
           115



<210> 1374  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (85)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (90)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (97)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1374  
 Gln Gly Thr Pro Arg Leu Cys Thr Thr Arg Leu Leu Val Gln Arg Ala  
           1                  5                  10                  15  
 Thr Ile Ser Val Cys Phe Ile Phe Tyr Cys Ile Ile Tyr Ser Lys Ile  
                   20                  25                  30  
 Asn Asn Thr Leu Thr Cys Phe His Thr Gln Lys Ile Tyr Arg Val Lys  
                   35                  40                  45  
 Ser Leu Pro Pro Ile Leu Ile Leu His Leu Leu Ser Ser Cys Leu Pro  
           50                  55                  60  
 Trp Pro Arg Gly Asn His Tyr Ser His Pro Tyr Ile Gln His Phe Phe  
           65                  70                  75                  80  
 Met Asp Ile Gln Xaa Asn Gly Asn Val Xaa Ser His Ile Ser Leu Phe  
                   85                  90                  95  
 Xaa Pro

<210> 1375  
 <211> 407  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (114)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1375  
 Met Gly Phe Leu Phe Leu Leu Gly Leu Tyr Ile Ser Ser Leu Ala Ser  
           1                  5                  10                  15  
 Cys Met Gly Gly Leu Tyr Gly Ala Pro Arg Ile Leu Gln Cys Ile Ala  
                   20                  25                  30

Gln Glu Lys Val Ile Pro Ala Leu Ala Cys Leu Gly Gln Gly Lys Gly  
 35 40 45  
 Pro Asn Lys Thr Pro Val Ala Ala Ile Cys Leu Thr Ser Leu Val Thr  
 50 55 60  
 Met Ala Phe Val Phe Val Gly Gln Val Asn Val Leu Ala Pro Ile Val  
 65 70 75 80  
 Thr Ile Asn Phe Met Leu Thr Tyr Val Ala Val Asp Tyr Ser Tyr Phe  
 85 90 95  
 Ser Leu Ser Met Cys Ser Cys Ser Leu Thr Pro Val Pro Glu Pro Val  
 100 105 110  
 Leu Xaa Glu Gly Ala Glu Gly Leu His Cys Ser Glu His Leu Leu Leu  
 115 120 125  
 Glu Lys Ala Pro Ser Tyr Gly Ser Glu Gly Pro Ala Gln Arg Val Leu  
 130 135 140  
 Glu Gly Thr Leu Leu Glu Phe Thr Lys Asp Met Asp Gln Leu Leu Gln  
 145 150 155 160  
 Leu Thr Arg Lys Leu Glu Ser Ser Gln Pro Arg Gln Gly Glu Gly Asn  
 165 170 175  
 Arg Thr Pro Glu Ser Gln Lys Arg Lys Ser Lys Lys Ala Thr Lys Gln  
 180 185 190  
 Thr Leu Gln Asp Ser Phe Leu Leu Asp Leu Lys Ser Pro Pro Ser Phe  
 195 200 205  
 Pro Val Glu Ile Ser Asp Arg Leu Pro Ala Ala Ser Trp Glu Gly Gln  
 210 215 220  
 Glu Ser Cys Trp Asn Lys Gln Thr Ser Lys Ser Glu Gly Thr Gln Pro  
 225 230 235 240  
 Glu Gly Thr Tyr Gly Glu Gln Leu Val Pro Glu Leu Cys Asn Gln Ser  
 245 250 255  
 Glu Ser Ser Gly Glu Asp Phe Phe Leu Lys Ser Arg Leu Gln Glu Gln  
 260 265 270  
 Asp Val Trp Arg Arg Ser Thr Ser Phe Tyr Thr His Met Cys Asn Pro  
 275 280 285  
 Trp Val Ser Leu Leu Gly Ala Val Gly Ser Leu Leu Ile Met Phe Val  
 290 295 300  
 Ile Gln Trp Val Tyr Thr Leu Val Asn Met Gly Val Ala Ala Ile Val  
 305 310 315 320  
 Tyr Phe Tyr Ile Gly Arg Ala Ser Pro Gly Leu His Leu Gly Ser Ala  
 325 330 335  
 Ser Asn Phe Ser Phe Phe Arg Trp Met Arg Ser Leu Leu Leu Pro Ser  
 340 345 350

Cys Arg Ser Leu Gln Ser Pro Gln Glu Gln Ile Ile Leu Ala Pro Ser  
 355 360 365  
 Leu Ala Lys Val Asp Met Glu Met Thr Gln Leu Thr Gln Glu Asn Ala  
 370 375 380  
 Asp Phe Ala Thr Arg Asp Arg Tyr His His Ser Ser Leu Val Asn Arg  
 385 390 395 400  
 Glu Gln Leu Met Pro His Tyr  
 405

<210> 1376  
 <211> 137  
 <212> PRT  
 <213> Homo sapiens

<400> 1376  
 Met Leu Ser Gly Arg Leu Val Leu Gly Leu Val Ser Met Ala Gly Arg  
 1 5 10 15  
 Val Cys Leu Cys Gln Gly Ser Ala Gly Ser Gly Ala Ile Gly Pro Val  
 20 25 30  
 Glu Ala Ala Ile Arg Thr Lys Leu Glu Glu Ala Leu Ser Pro Glu Val  
 35 40 45  
 Leu Glu Leu Arg Asn Glu Ser Gly Gly His Ala Val Pro Pro Gly Ser  
 50 55 60  
 Glu Thr His Phe Arg Val Ala Val Val Ser Ser Arg Phe Glu Gly Leu  
 65 70 75 80  
 Ser Pro Leu Gln Arg His Arg Leu Val His Ala Ala Leu Ala Glu Glu  
 85 90 95  
 Leu Gly Gly Pro Val His Ala Leu Ala Ile Gln Ala Arg Thr Pro Ala  
 100 105 110  
 Gln Trp Arg Glu Asn Ser Gln Leu Asp Thr Ser Pro Pro Cys Leu Gly  
 115 120 125  
 Gly Asn Lys Lys Thr Leu Gly Thr Pro  
 130 135

<210> 1377  
 <211> 143  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (19)  
 <223> Xaa equals any of the naturally occurring L-amino acids.

<220>  
 <221> SITE  
 <222> (47)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (58)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (104)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1377  
 Phe Gly Pro Ala Val Phe Gly Phe Gly Ser Pro Arg Gly Lys Pro Pro  
     1                    5                    10                    15  
 Gly Asn Xaa Arg Gly Gly Pro Ile Arg Val Pro Gly Phe Gly Arg Pro  
                     20                    25                    30  
 Arg Pro Ile Ser Ala Pro Glu Val Trp Glu Gly Arg Pro Leu Xaa Ala  
                     35                    40                    45  
 Pro Arg Ser Cys Phe Arg Asn Phe Arg Xaa Arg Arg Ser Gly Gly His  
                     50                    55                    60  
 Ala Val Pro Pro Gly Ser Glu Thr His Phe Arg Val Ala Val Val Ser  
                     65                    70                    75                    80  
 Ser Arg Phe Glu Gly Leu Ser Pro Leu Gln Arg His Arg Leu Val His  
                     85                    90                    95  
 Ala Ala Leu Ala Glu Glu Leu Xaa Gly Pro Val His Ala Leu Ala Ile  
                     100                    105                    110  
 Gln Ala Arg Thr Pro Ala Gln Trp Arg Glu Asn Ser Gln Leu Asp Thr  
                     115                    120                    125  
 Ser Pro Pro Cys Leu Gly Gly Asn Lys Lys Thr Leu Gly Thr Pro  
                     130                    135                    140

<210> 1378  
 <211> 137  
 <212> PRT  
 <213> Homo sapiens

<400> 1378  
 Met Leu Ser Gly Arg Leu Val Leu Gly Leu Val Ser Met Ala Gly Arg  
     1                    5                    10                    15  
 Val Cys Leu Cys Gln Gly Ser Ala Gly Ser Gly Ala Ile Gly Pro Val  
                     20                    25                    30  
 Glu Ala Ala Ile Arg Thr Lys Leu Glu Glu Ala Leu Ser Pro Glu Val  
                     35                    40                    45

Leu Glu Leu Arg Asn Glu Ser Gly Gly His Ala Val Pro Pro Gly Ser  
 50 55 60

Glu Thr His Phe Arg Val Ala Val Val Ser Ser Arg Phe Glu Gly Leu  
 65 70 75 80

Ser Pro Leu Gln Arg His Arg Leu Val His Ala Ala Leu Ala Glu Glu  
 85 90 95

Leu Gly Gly Pro Val His Ala Leu Ala Ile Gln Ala Arg Thr Pro Ala  
 100 105 110

Gln Trp Arg Glu Asn Ser Gln Leu Asp Thr Ser Pro Pro Cys Leu Gly  
 115 120 125

Gly Asn Lys Lys Thr Leu Gly Thr Pro  
 130 135

<210> 1379

<211> 82

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (17)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1379

Met Ile Arg Arg Leu Val Phe Ala Ala Phe Pro Arg Leu Phe Pro Val  
 1 5 10 15

Xaa Leu Pro Ser Met Leu Thr His Trp Ala Ser Leu Ala Val Ile Pro  
 20 25 30

Thr Met Thr Ala Thr Ser Val Gly Lys Ala Pro Pro Gly Pro Leu Pro  
 35 40 45

Asp Ala Ser Pro Ser Leu Arg Leu Pro Ala Arg Arg Arg Pro Asp Pro  
 50 55 60

Val Gly Ala Cys Arg Gly Val Arg Gly Met Ala Asp Leu Met Val Pro  
 65 70 75 80

Leu Pro

<210> 1380

<211> 254

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (176)

<223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (210).

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (214)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (237)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (246)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1380

Glu	Phe	Gly	Thr	Ser	Leu	Lys	Val	Arg	Gly	Phe	Ile	Leu	Glu	Val	Ser
1				5					10					15	

Glu	Thr	Thr	Asn	Pro	Pro	Glu	Gly	Thr	Asn	Ser	Gly	His	Ser	Gly	Met
			20					25					30		

Val	Ser	Ala	Leu	Cys	Gly	Leu	Cys	Leu	Leu	Gly	Ser	Asn	Asp	Ser	Pro
		35				40						45			

Ala	Ser	Ala	Ser	Gln	Val	Ala	Gly	Thr	Thr	Gly	Leu	Ser	Lys	Ser	Leu
	50					55					60				

Gly	Leu	Ile	Glu	Gly	Tyr	Gly	Gly	Arg	Gly	Lys	Gly	Gly	Leu	Pro	Ala
65					70					75					80

Thr	Leu	Ser	Pro	Ala	Glu	Glu	Glu	Lys	Ala	Lys	Gly	Pro	His	Glu	Lys
				85					90					95	

Tyr	Gly	Tyr	Asn	Ser	Tyr	Leu	Ser	Glu	Lys	Ile	Ser	Leu	Asp	Arg	Ser
			100					105					110		

Ile	Pro	Asp	Tyr	Arg	Pro	Thr	Lys	Cys	Lys	Glu	Leu	Lys	Tyr	Ser	Lys
		115					120					125			

Asp	Leu	Pro	Gln	Ile	Ser	Ile	Ile	Phe	Ile	Phe	Val	Asn	Glu	Ala	Leu
	130					135					140				

Ser	Val	Ile	Leu	Arg	Ser	Val	His	Ser	Ala	Val	Asn	His	Thr	Pro	Thr
145					150					155					160

His	Leu	Leu	Lys	Glu	Ile	Ile	Leu	Val	Asp	Asp	Asn	Ser	Asp	Glu	Xaa
			165						170					175	

Glu	Leu	Lys	Val	Pro	Leu	Glu	Glu	Tyr	Val	His	Lys	Arg	Tyr	Pro	Gly
			180					185					190		

Leu	Val	Lys	Val	Val	Arg	Asn	Gln	Lys	Arg	Glu	Ser	Leu	Ile	Arg	Ala
			195				200							205	

Arg Xaa Glu Gly Trp Xaa Val Ala Thr Gly Gln Val Thr Gly Phe Phe  
 210 215 220

Asp Ala Pro Arg Gly Ile His Arg Leu Leu Gly Leu Xaa Arg Val Tyr  
 225 230 235 240

Pro Asp Pro Gly Lys Xaa Arg Lys Arg Gly Asn Leu Pro Leu  
 245 250

<210> 1381

<211> 74

<212> PRT

<213> Homo sapiens

<400> 1381

Gly Arg Glu Phe Glu Thr Ser Leu Asp Asn Ile Ala Arg Asp Pro Val  
 1 5 10 15

Cys Ile Thr Ser Leu Lys Ile Asp Trp Ala Trp Trp Cys Met Met Val  
 20 25 30

Val Pro Ala Thr Arg Gly Thr Gly Ala Glu Gly Ser Leu Glu Ser Arg  
 35 40 45

Phe Gln Ala Ala Val Gly Cys Asp Cys Val Thr Ala Leu Gln Pro Gly  
 50 55 60

Gln Gln Ser Glu Thr Leu Ser Leu Lys Lys  
 65 70

<210> 1382

<211> 273

<212> PRT

<213> Homo sapiens

<400> 1382

Met Val Ser Ala Leu Cys Gly Leu Cys Leu Leu Gly Ser Asn Asp Ser  
 1 5 10 15

Pro Ala Ser Ala Ser Gln Val Ala Gly Thr Thr Gly Leu Ser Lys Ser  
 20 25 30

Leu Gly Leu Ile Glu Gly Tyr Gly Gly Arg Gly Lys Gly Gly Leu Pro  
 35 40 45

Ala Thr Leu Ser Pro Ala Glu Glu Glu Lys Ala Lys Gly Pro His Glu  
 50 55 60

Lys Tyr Gly Tyr Asn Ser Tyr Leu Ser Glu Lys Ile Ser Leu Asp Arg  
 65 70 75 80

Ser Ile Pro Asp Tyr Arg Pro Thr Lys Cys Lys Glu Leu Lys Tyr Ser  
 85 90 95

Lys Asp Leu Pro Gln Ile Ser Ile Ile Phe Ile Phe Val Asn Glu Ala

100 105 110  
 Leu Ser Val Ile Leu Arg Ser Val His Ser Ala Val Asn His Thr Pro  
 115 120 125  
 Thr His Leu Leu Lys Glu Ile Ile Leu Val Asp Asp Asn Ser Asp Glu  
 130 135 140  
 Glu Glu Leu Lys Val Pro Leu Glu Glu Tyr Val His Lys Arg Tyr Pro  
 145 150 155 160  
 Gly Leu Val Lys Val Val Arg Asn Gln Lys Arg Glu Gly Leu Ile Arg  
 165 170 175  
 Ala Arg Ile Glu Gly Trp Lys Val Ala Thr Gly Gln Val Thr Gly Phe  
 180 185 190  
 Phe Asp Ala His Val Glu Phe Thr Ala Gly Trp Ala Glu Pro Val Leu  
 195 200 205  
 Ser Arg Ile Gln Glu Asn Arg Lys Arg Val Ile Leu Pro Ser Ile Asp  
 210 215 220  
 Asn Ile Lys Gln Asp Asn Phe Glu Val Gln Arg Tyr Glu Asn Ser Ala  
 225 230 235 240  
 His Gly Tyr Ser Trp Glu Leu Trp Cys Met Tyr Ile Ser Pro Pro Lys  
 245 250 255  
 Asp Trp Trp Asp Ala Gly Asp Pro Ser Leu Pro Ile Ser Asp Arg Phe  
 260 265 270  
 Ser

<210> 1383  
 <211> 238  
 <212> PRT  
 <213> Homo sapiens

<400> 1383  
 Met Gln Gln Gly Pro Lys Glu Phe Ile Glu Cys Val Ser His Ile Arg  
 1 5 10 15  
 Leu Leu Ser Trp Leu Leu Leu Gly Ser Leu Thr His Asn Ala Val Cys  
 20 25 30  
 Pro Asn Ala Ser Ser Pro Cys Leu Pro Ile Pro Leu Asp Ala Gly Ser  
 35 40 45  
 His Val Ala Asp His Leu Ile Val Ile Leu Ile Gly Phe Pro Glu Gln  
 50 55 60  
 Ser Lys Thr Ser Val Leu His Met Cys Ser Leu Phe His Ala Phe Ile  
 65 70 75 80  
 Phe Ala Gln Leu Trp Thr Val Tyr Cys Glu Gln Ser Ala Val Ala Thr  
 85 90 95



Asn Leu Gln Asn Gln Asn Glu Phe Ser Phe Thr Ala Ile Leu Thr Ala  
 100 105 110  
 Leu Glu Phe Trp Ser Arg Val Thr Pro Ser Ile Leu Gln Leu Met Ala  
 115 120 125  
 His Asn Lys Val Met Val Glu Met Val Cys Leu His Val Ile Ser Leu  
 130 135 140  
 Met Glu Ala Leu Gln Glu Cys Asn Ser Thr Ile Phe Val Lys Leu Ile  
 145 150 155 160  
 Pro Met Trp Leu Pro Met Ile Gln Ser Asn Ile Lys His Leu Ser Ala  
 165 170 175  
 Gly Leu Gln Leu Arg Leu Gln Ala Ile Gln Asn His Val Asn His His  
 180 185 190  
 Ser Leu Arg Thr Leu Pro Gly Ser Gly Gln Ser Ser Ala Gly Leu Ala  
 195 200 205  
 Ala Leu Arg Lys Trp Leu Gln Cys Thr Gln Phe Lys Met Ala Gln Val  
 210 215 220  
 Glu Ile Gln Ser Ser Glu Ala Ala Ser Gln Phe Tyr Pro Leu  
 225 230 235

<210> 1384  
 <211> 227  
 <212> PRT  
 <213> Homo sapiens

<400> 1384  
 His Glu Leu Lys Val Gly Leu Ala Gln Ile Ala Ala Met Asp Ile Ser  
 1 5 10 15  
 Arg Gly Asn His Arg Asp Asn Lys Ala Val Ile Arg Tyr Leu Pro Trp  
 20 25 30  
 Leu Tyr His Pro Pro Ser Ala Met Gln Gln Gly Pro Lys Glu Phe Ile  
 35 40 45  
 Glu Cys Val Ser His Ile Arg Leu Leu Ser Trp Leu Leu Leu Gly Ser  
 50 55 60  
 Leu Thr His Asn Ala Val Cys Pro Asn Ala Ser Ser Pro Cys Leu Pro  
 65 70 75 80  
 Ile Pro Leu Asp Ala Gly Ser His Val Ala Asp His Leu Ile Val Ile  
 85 90 95  
 Leu Ile Gly Phe Pro Glu Gln Ser Lys Thr Ser Val Leu His Met Cys  
 100 105 110  
 Ser Leu Phe His Ala Phe Ile Phe Ala Gln Leu Trp Thr Val Tyr Cys  
 115 120 125

Glu Gln Ser Ala Val Ala Thr Asn Leu Gln Asn Gln Asn Glu Phe Ser  
 130 135 140  
 Phe Thr Ala Ile Leu Thr Ala Leu Glu Phe Trp Ser Arg Val Thr Pro  
 145 150 155 160  
 Ser Ile Leu Gln Leu Met Ala His Asn Lys Val Met Val Glu Met Val  
 165 170 175  
 Cys Leu His Val Ile Ser Leu Met Glu Ala Leu Gln Glu Cys Asn Ser  
 180 185 190  
 Thr Ile Phe Val Lys Leu Ile Pro Met Trp Leu Pro Met Ile Gln Ser  
 195 200 205  
 Asn Ile Lys His Leu Ser Ala Gly Leu Gln Phe Ala Ser Arg Leu Phe  
 210 215 220  
 Arg Thr Thr  
 225

<210> 1385  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 1385  
 Met Ser Thr Cys Cys Thr Ser Ala Leu Gln Tyr Leu Leu Ala Leu Phe  
 1 5 10 15  
 Pro Leu Pro Ala Pro Asn Cys Val Ser Tyr Arg Ser Gln Gly Ser Ser  
 20 25 30  
 Cys Tyr Leu Leu Leu Gln Ile Gln Lys Pro Arg Leu Arg Glu Glu Pro  
 35 40 45  
 Glu Trp Pro Gln Pro Gln Ser Lys Ser Met Arg Gly Ser Met Lys Leu  
 50 55 60  
 Gly Phe Phe Pro His Cys Thr Arg Leu Leu Pro Ser Trp Gly Gly Gly  
 65 70 75 80  
 Gly Arg Cys Ser Gly  
 85

<210> 1386  
 <211> 110  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (20)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
 <400> 1386

Leu Leu Gly Cys Thr Lys Ile Gly Gly Arg Ser Asp Leu Ala Gly Pro  
 1 5 10 15  
 Trp Val Arg Xaa Arg Ser Leu Glu Pro Thr Cys Val Gly Met Asn Pro  
 20 25 30  
 Gly Ser Ala Gly Cys Pro Leu Val Ser Gly Ser Thr Ser Leu Cys Phe  
 35 40 45  
 Arg Val Leu Ile Tyr Lys Met Gly Met Met Met Met Ile Leu Trp Gly  
 50 55 60  
 Cys Asn Met Val Gln Ser His Trp Lys Ser Leu Ala Val Pro Gln Lys  
 65 70 75 80  
 Val Lys His Lys Ser Tyr His Met Ile Gln Val Trp Gln His Ile Pro  
 85 90 95  
 Val Val Pro Ala Thr Gln Glu Asp His Leu Ser Pro Gly Val  
 100 105 110

<210> 1387  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 1387  
 Met Ser Thr Cys Cys Thr Ser Ala Leu Gln Tyr Leu Leu Ala Leu Phe  
 1 5 10 15  
 Pro Leu Pro Ala Pro Asn Cys Val Ser Tyr Arg Ser Gln Gly Ser Ser  
 20 25 30  
 Cys Tyr Leu Leu Leu Gln Ile Gln Lys Pro Arg Leu Arg Glu Glu Pro  
 35 40 45  
 Glu Trp Pro Gln Pro Gln Ser Lys Ser Met Arg Gly Ser Met Lys Leu  
 50 55 60  
 Gly Phe Phe Pro His Cys Thr Arg Leu Leu Pro Ser Trp Gly Gly Gly  
 65 70 75 80  
 Gly Arg Cys Ser Gly  
 85

<210> 1388  
 <211> 261  
 <212> PRT  
 <213> Homo sapiens

<400> 1388  
 Met Ala Val Lys Arg Gln Pro Gly Ala Ala Ala Leu Ala Trp Lys Asn  
 1 5 10 15  
 Pro Ile Ser Ser Trp Phe Thr Ala Met Leu His Cys Phe Gly Gly Gly  
 20 25 30

Ile Leu Ser Cys Leu Leu Leu Ala Glu Pro Pro Leu Lys Phe Leu Ala  
 35 40 45  
 Asn His Thr Asn Ile Leu Leu Ala Ser Ser Ile Trp Tyr Ile Thr Phe  
 50 55 60  
 Phe Cys Pro His Asp Leu Val Ser Gln Gly Tyr Ser Tyr Leu Pro Val  
 65 70 75 80  
 Gln Leu Leu Ala Ser Gly Met Lys Glu Val Thr Arg Thr Trp Lys Ile  
 85 90 95  
 Val Gly Gly Val Thr His Ala Asn Ser Tyr Tyr Lys Asn Gly Trp Ile  
 100 105 110  
 Val Met Ile Ala Ile Gly Trp Ala Arg Gly Ala Gly Gly Thr Ile Ile  
 115 120 125  
 Thr Asn Phe Glu Arg Leu Val Lys Gly Asp Trp Lys Pro Glu Gly Asp  
 130 135 140  
 Glu Trp Leu Lys Met Ser Tyr Pro Ala Lys Val Thr Leu Leu Gly Ser  
 145 150 155 160  
 Val Ile Phe Thr Phe Gln His Thr Gln His Leu Ala Ile Ser Lys His  
 165 170 175  
 Asn Leu Met Phe Leu Tyr Thr Ile Phe Ile Val Ala Thr Lys Ile Thr  
 180 185 190  
 Met Met Thr Thr Gln Thr Ser Thr Met Thr Phe Ala Pro Phe Glu Asp  
 195 200 205  
 Thr Leu Ser Trp Met Leu Phe Gly Trp Gln Gln Pro Phe Ser Ser Cys  
 210 215 220  
 Glu Lys Lys Ser Glu Ala Lys Ser Pro Ser Asn Gly Val Gly Ser Leu  
 225 230 235 240  
 Ala Ser Lys Pro Val Asp Val Ala Ser Asp Asn Val Lys Lys Lys His  
 245 250 255  
 Thr Lys Lys Asn Glu  
 260

&lt;210&gt; 1389

&lt;211&gt; 72

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1389

Ile Val Asn Pro Met Phe Cys Asn Phe His Phe Arg Ser Leu Thr Tyr  
 1 5 10 15  
 Phe Phe Leu Ser His Lys Asn Thr Phe Val Leu Ile Val Gly Glu Ile  
 20 25 30

Phe Ser Ala Phe Cys Met Phe Phe Leu Ile Phe Val Gly Leu Asn Ile  
           35                                  40                                  45  
 Leu Val Val Ile Thr Val Ile Ile Gln Gln Lys Ala Tyr Pro Phe Lys  
           50                                  55                                  60  
 Asn Phe Ser Thr Met Ser Phe Phe  
       65                                  70

<210> 1390  
 <211> 261  
 <212> PRT  
 <213> Homo sapiens

<400> 1390  
 Met Ala Val Lys Arg Gln Pro Gly Ala Ala Ala Leu Ala Trp Lys Asn  
       1                                  5                                  10                                  15  
 Pro Ile Ser Ser Trp Phe Thr Ala Met Leu His Cys Phe Gly Gly Gly  
           20                                  25                                  30  
 Ile Leu Ser Cys Leu Leu Leu Ala Glu Pro Pro Leu Lys Phe Leu Ala  
           35                                  40                                  45  
 Asn His Thr Asn Ile Leu Leu Ala Ser Ser Ile Trp Tyr Ile Thr Phe  
       50                                  55                                  60  
 Phe Cys Pro His Asp Leu Val Ser Gln Gly Tyr Ser Tyr Leu Pro Val  
       65                                  70                                  75                                  80  
 Gln Leu Leu Ala Ser Gly Met Lys Glu Val Thr Arg Thr Trp Lys Ile  
           85                                  90                                  95  
 Val Gly Gly Val Thr His Ala Asn Ser Tyr Tyr Lys Asn Gly Trp Ile  
           100                                  105                                  110  
 Val Met Ile Ala Ile Gly Trp Ala Arg Gly Ala Gly Gly Thr Ile Ile  
           115                                  120                                  125  
 Thr Asn Phe Glu Arg Leu Val Lys Gly Asp Trp Lys Pro Glu Gly Asp  
       130                                  135                                  140  
 Glu Trp Leu Lys Met Ser Tyr Pro Ala Lys Val Thr Leu Leu Gly Ser  
       145                                  150                                  155                                  160  
 Val Ile Phe Thr Phe Gln His Thr Gln His Leu Ala Ile Ser Lys His  
           165                                  170                                  175  
 Asn Leu Met Phe Leu Tyr Thr Ile Phe Ile Val Ala Thr Lys Ile Thr  
           180                                  185                                  190  
 Met Met Thr Thr Gln Thr Ser Thr Met Thr Phe Ala Pro Phe Glu Asp  
           195                                  200                                  205  
 Thr Leu Ser Trp Met Leu Phe Gly Trp Gln Gln Pro Phe Ser Ser Cys  
       210                                  215                                  220  
 Glu Lys Lys Ser Glu Ala Lys Ser Pro Ser Asn Gly Val Gly Ser Leu

[illegible]

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<210> 1391
<211> 98
<212> PRT
<213> Homo sapiens
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<400> 1391
Met His Leu His Val Ser Val Ser Leu Ile Trp Gly Leu Leu Ser Phe
  1             5             10             15

Leu Ser Leu Gln Val Cys Val Phe Val Gly Ser Ser Gln Pro Leu Leu
      20             25             30

Leu Gln Cys Val Ser Gly Pro Ala Pro Phe Leu Leu Ser Leu Gly Val
      35             40             45

Arg His Gln Pro Phe Trp Asp Cys Pro Thr Gly Pro Ser Arg Glu Glu
      50             55             60

Thr Arg Leu Asn Pro Arg Ala Leu Thr Arg Pro Arg Gln Thr Cys Trp
      65             70             75             80

Ser Phe Gly Trp Gln Val Ala Leu Arg Pro Ser Glu Lys Ser Pro Cys
      85             90             95

Phe Ser

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<210> 1392
<211> 98
<212> PRT
<213> Homo sapiens
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<400> 1392
Met His Leu His Val Ser Val Ser Leu Ile Trp Gly Leu Leu Ser Phe
  1              5              10              15
Leu Ser Leu Gln Val Cys Val Phe Val Gly Ser Ser Gln Pro Leu Leu
      20              25              30
Leu Gln Cys Val Ser Gly Pro Ala Pro Phe Leu Leu Ser Leu Gly Val
      35              40              45
Arg His Gln Pro Phe Trp Asp Cys Pro Thr Gly Pro Ser Arg Glu Glu
  50              55              60
Thr Arg Leu Asn Pro Arg Ala Leu Thr Arg Pro Arg Gln Thr Cys Trp
  65              70              75              80

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Ser Phe Gly Trp Gln Val Ala Leu Arg Pro Ser Glu Lys Ser Pro Cys  
                                     85                                    90                                    95

Phe Ser

<210> 1393

<211> 139

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (14)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (116)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (139)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1393

Met Ala Leu Tyr Glu Leu Phe Ser His Pro Val Glu Arg Xaa Tyr Arg  
       1                                    5                                    10                                    15

Ala Gly Leu Cys Ser Lys Ala Ala Leu Phe Leu Leu Leu Ala Ala Ala  
                                     20                                    25                                    30

Leu Thr Tyr Ile Pro Pro Leu Leu Val Ala Phe Arg Ser His Gly Phe  
                                     35                                    40                                    45

Trp Leu Lys Arg Thr Ala Thr Arg Ser Ser Arg Pro Cys Ala Ser Asn  
       50                                    55                                    60

Thr Arg Cys Cys Ser Trp Pro Cys Ser Asp Pro Lys Ala Thr Gly Ser  
       65                                    70                                    75                                    80

Ser Pro Gly Ala Arg Ser Pro Pro Ser Thr Gly Cys Lys Gly Ile Ala  
                                     85                                    90                                    95

Cys Ala Ser Arg Ser Phe Arg Gly Gly Asp Asn Ala Cys Cys Val Lys  
                                     100                                    105                                    110

Gln Asp Ser Xaa Ser Leu Cys Ile Tyr Arg Ser Asp Val Asp Ser Ser  
                                     115                                    120                                    125

Gln Asn Ser Leu Val Thr Lys Gly Ala Gly Xaa  
       130                                    135

<210> 1394

<211> 316

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1394

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Met Ala Leu Tyr Glu Leu Phe Ser His Pro Val Glu Arg Ser Tyr Arg
 1           5           10           15
Ala Gly Leu Cys Ser Lys Ala Ala Leu Phe Leu Leu Leu Ala Ala Ala
           20           25           30
Leu Thr Tyr Ile Pro Pro Leu Leu Val Ala Phe Arg Ser His Gly Phe
           35           40           45
Trp Leu Lys Arg Ser Ser Tyr Glu Glu Gln Pro Thr Val Arg Phe Gln
           50           55           60
His Gln Val Leu Leu Val Ala Leu Leu Gly Pro Glu Ser Asp Gly Phe
           65           70           75           80
Leu Ala Trp Ser Thr Phe Pro Ala Phe Asn Arg Leu Gln Gly Asp Arg
           85           90           95
Leu Arg Val Pro Leu Val Ser Thr Arg Glu Glu Asp Arg Asn Gln Asp
           100          105          110
Gly Lys Thr Asp Met Leu His Phe Lys Leu Glu Leu Pro Leu Gln Ser
           115          120          125
Thr Glu His Val Leu Gly Val Gln Leu Ile Leu Thr Phe Ser Tyr Arg
           130          135          140
Leu His Arg Met Ala Thr Leu Val Met Gln Ser Met Ala Phe Leu Gln
           145          150          155          160
Ser Ser Phe Pro Val Pro Gly Ser Gln Leu Tyr Val Asn Gly Asp Leu
           165          170          175
Arg Leu Gln Gln Lys Gln Pro Leu Ser Cys Gly Gly Leu Asp Ala Arg
           180          185          190
Tyr Asn Ile Ser Val Ile Asn Gly Thr Ser Pro Phe Ala Tyr Asp Tyr
           195          200          205
Asp Leu Thr His Ile Val Ala Ala Tyr Gln Glu Arg Asn Val Thr Thr
           210          215          220
Val Leu Asn Asp Pro Asn Pro Ile Trp Leu Val Gly Arg Ala Ala Asp
           225          230          235          240
Ala Pro Phe Val Ile Asn Ala Ile Ile Arg Tyr Pro Val Glu Val Ile
           245          250          255
Ser Tyr Gln Pro Gly Phe Trp Glu Met Val Lys Phe Ala Trp Val Gln
           260          265          270
Tyr Val Ser Ile Leu Leu Ile Phe Leu Trp Val Phe Glu Arg Ile Lys
           275          280          285
Ile Phe Val Phe Gln Asn Gln Val Val Thr Thr Ile Pro Val Thr Val
           290          295          300

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Thr Pro Arg Gly Asp Leu Cys Lys Glu His Leu Ser  
 305 310 315

<210> 1395

<211> 103

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (77)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1395

Met Ala Phe Leu Leu Glu Arg Ser Gly Thr Leu Leu Ile Cys Ser Met  
 1 5 10 15

Trp Trp His His Gly Tyr Ser Asn Ile Thr Gly Thr Glu Gly Glu Arg  
 20 25 30

Arg Asn Leu Lys Arg Asn Lys Thr Asn Phe Arg Arg Phe Gln Asp Gly  
 35 40 45

Arg Ile Gly Thr Ala Pro Val Tyr Ser Ser Gln Cys Glu Arg Cys Arg  
 50 55 60

Arg Trp Val Ile Ser Ala Phe Pro Thr Glu Gln Thr Xaa His Gln Lys  
 65 70 75 80

Ile Ile Ser His Ala Trp Leu Gly Gly Ser His Ala His Gly Ala Ser  
 85 90 95

Leu Ile Ala Ser Thr Ala Val  
 100

<210> 1396

<211> 103

<212> PRT

<213> Homo sapiens

<400> 1396

Met Ala Phe Leu Leu Glu Arg Ser Gly Thr Leu Leu Ile Cys Ser Met  
 1 5 10 15

Trp Trp His His Gly Tyr Ser Asn Ile Thr Gly Thr Glu Gly Glu Arg  
 20 25 30

Arg Asn Leu Lys Arg Asn Lys Thr Asn Phe Arg Arg Phe Gln Asp Gly  
 35 40 45

Arg Ile Gly Thr Ala Pro Val Tyr Ser Ser Gln Cys Glu Arg Cys Arg  
 50 55 60

Arg Trp Val Ile Ser Ala Phe Pro Thr Glu Gln Thr Ala His Gln Lys  
 65 70 75 80

Ile Ile Ser His Ala Trp Leu Gly Gly Ser His Ala His Gly Ala Ser  
                     85                    90                    95

Leu Ile Ala Ser Thr Ala Val  
                     100

<210> 1397

<211> 125

<212> PRT

<213> Homo sapiens

<400> 1397

Met Cys Val Trp Phe Cys Leu Phe Ala Cys Leu Phe Ala Cys Leu Phe  
     1                    5                    10                    15

Phe Glu Thr Glu Ser His Ser Val Ala Gln Ala Gly Val Gln Trp Leu  
                     20                    25                    30

Asp Leu Ser Ser Leu Gln Gln Pro Pro Pro Pro Gly Phe Lys Cys Phe  
                     35                    40                    45

Ser Cys Leu Cys Leu Leu Ser Ser Trp Asp Tyr Arg Arg Ala Cys His  
                     50                    55                    60

His Thr Arg Ile Ile Phe Val Phe Leu Val Glu Met Gly Phe His His  
     65                    70                    75                    80

Val Asp Gln Ala Asp Leu Glu Leu Leu Thr Ser Ser Asp Pro Pro Ala  
                     85                    90                    95

Leu Ala Ser Arg Ser Ala Gly Ile Thr Gly Val Ser His His Thr Pro  
                     100                    105                    110

Pro Ala Cys Leu Val Phe Lys Phe Leu Phe Leu Gly Ser  
                     115                    120                    125

<210> 1398

<211> 112

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (91)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (106)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1398

Ala Pro Val Leu Leu Leu Pro Ser Ser Cys Trp Gln Phe Trp Val Leu  
     1                    5                    10                    15

Gly Phe Phe Phe Phe Arg Gln Ser Leu Thr Pro Ser Pro Gly Trp Lys  
                   20                  25                  30  
 Tyr Ser Gly Ala Val Ser Ala His Cys Ser Leu Arg Leu Pro Gly Ser  
                   35                  40                  45  
 Asn Asp Pro Leu Ala Ser Ala Ser Gln Leu Ala Gly Thr Thr Gly Ala  
                   50                  55                  60  
 His His His Gly Gln Leu Ile Phe Val Phe Leu Val Glu Met Gly Phe  
                   65                  70                  75                  80  
 His His Ile Ala Gln Ala Gly Leu Lys Leu Xaa Thr Ser Ser Asp Leu  
                   85                  90                  95  
 Leu Thr Ser Ala Phe Gln Ser Ala Gly Xaa Ile Tyr Ile Leu Asn Lys  
                   100                  105                  110

<210> 1399  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 1399  
 Met Cys Val Trp Phe Cys Leu Phe Ala Cys Leu Phe Ala Cys Leu Phe  
                   1                  5                  10                  15  
 Phe Glu Thr Glu Ser His Ser Val Ala Gln Ala Gly Val Gln Trp Leu  
                   20                  25                  30  
 Asp Leu Ser Ser Leu Gln Gln Pro Pro Pro Gly Phe Lys Cys Phe  
                   35                  40                  45  
 Ser Cys Leu Cys Leu Leu Ser Ser Trp Asp Tyr Arg Arg Ala Cys His  
                   50                  55                  60  
 His Thr Arg Ile Ile Phe Val Phe Leu Val Glu Met Gly Phe His His  
                   65                  70                  75                  80  
 Val Asp Gln Ala Asp Leu Glu Leu Leu Thr Ser Ser Asp Pro Pro Ala  
                   85                  90                  95  
 Leu Ala Ser Arg Ser Ala Gly Ile Thr Gly Val Ser His His Thr Pro  
                   100                  105                  110  
 Pro Ala Cys Leu Phe Phe Lys Phe Leu Phe Leu Gly Ser  
                   115                  120                  125

<210> 1400  
 <211> 79  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1400

Met Glu Leu Gly Cys Trp Thr His Trp Gly Ser Leu Phe Phe Ser Ser  
 1 5 10 15

Phe Ser Ser Arg Pro Cys Gln Glu Ser Thr Gln Ser Leu Met Lys Pro  
 20 25 30

Ala Leu Glu Gln Ser Gly Ile Ser Cys Val Gly Ser Ala Val Asn Met  
 35 40 45

Ile Arg Leu Ser Ala Ser Ala Pro Glu Arg Gly Lys Ser Trp Val Ile  
 50 55 60

Pro Ser Leu Ala Ala Gly Met Arg Arg Met Ser Val Thr Pro Ala  
 65 70 75

&lt;210&gt; 1401

&lt;211&gt; 455

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (1)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (17)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (103)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (178)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1401

Xaa Thr Gly Gln Arg Cys Glu Asn Leu Leu Glu Glu Arg Asn Cys Ser  
 1 5 10 15

Xaa Pro Gly Gly Pro Val Asn Gly Tyr Gln Lys Ile Thr Gly Gly Pro  
 20 25 30

Gly Leu Ile Asn Gly Arg His Ala Lys Ile Gly Thr Val Val Ser Phe  
 35 40 45

Phe Cys Asn Asn Ser Tyr Val Leu Ser Gly Asn Glu Lys Arg Thr Cys  
 50 55 60

Gln Gln Asn Gly Glu Trp Ser Gly Lys Gln Pro Ile Cys Ile Lys Ala  
 65 70 75 80

Cys Arg Glu Pro Lys Ile Ser Asp Leu Val Arg Arg Arg Val Leu Pro

85										90			95				
Met	Gln	Val	Gln	Ser	Arg	Xaa	Thr	Pro	Leu	His	Gln	Leu	Tyr	Ser	Ala		
			100					105						110			
Ala	Phe	Ser	Lys	Gln	Lys	Leu	Gln	Ser	Ala	Pro	Thr	Lys	Lys	Pro	Ala		
		115					120					125					
Leu	Pro	Phe	Gly	Asp	Leu	Pro	Met	Gly	Tyr	Gln	His	Leu	His	Thr	Gln		
	130					135					140						
Leu	Gln	Tyr	Glu	Cys	Ile	Ser	Pro	Phe	Tyr	Arg	Arg	Leu	Gly	Ser	Ser		
145					150					155					160		
Arg	Arg	Thr	Cys	Leu	Arg	Thr	Gly	Lys	Trp	Ser	Gly	Arg	Ala	Pro	Ser		
				165					170					175			
Cys	Xaa	Pro	Ile	Cys	Gly	Lys	Ile	Glu	Asn	Ile	Thr	Ala	Pro	Lys	Thr		
			180					185					190				
Gln	Gly	Leu	Arg	Trp	Pro	Trp	Gln	Ala	Ala	Ile	Tyr	Arg	Arg	Thr	Ser		
		195					200					205					
Gly	Val	His	Asp	Gly	Ser	Leu	His	Lys	Gly	Ala	Trp	Phe	Leu	Val	Cys		
	210					215					220						
Ser	Gly	Ala	Leu	Val	Asn	Glu	Arg	Thr	Val	Val	Val	Ala	Ala	His	Cys		
225					230					235					240		
Val	Thr	Asp	Leu	Gly	Lys	Val	Thr	Met	Ile	Lys	Thr	Ala	Asp	Leu	Lys		
				245					250					255			
Val	Val	Leu	Gly	Lys	Phe	Tyr	Arg	Asp	Asp	Asp	Arg	Asp	Glu	Lys	Thr		
			260					265					270				
Ile	Gln	Ser	Leu	Gln	Ile	Ser	Ala	Ile	Ile	Leu	His	Pro	Asn	Tyr	Asp		
		275					280					285					
Pro	Ile	Leu	Leu	Asp	Ala	Asp	Ile	Ala	Ile	Leu	Lys	Leu	Leu	Asp	Lys		
	290					295					300						
Ala	Arg	Ile	Ser	Thr	Arg	Val	Gln	Pro	Ile	Cys	Leu	Ala	Ala	Ser	Arg		
305					310					315					320		
Asp	Leu	Ser	Thr	Ser	Phe	Gln	Glu	Ser	His	Ile	Thr	Val	Ala	Gly	Trp		
				325					330					335			
Asn	Val	Leu	Ala	Asp	Val	Arg	Ser	Pro	Gly	Phe	Lys	Asn	Asp	Thr	Leu		
			340					345					350				
Arg	Ser	Gly	Val	Val	Ser	Val	Val	Asp	Ser	Leu	Leu	Cys	Glu	Glu	Gln		
		355					360					365					
His	Glu	Asp	His	Gly	Ile	Pro	Val	Ser	Val	Thr	Asp	Asn	Met	Phe	Cys		
	370					375					380						
Ala	Ser	Trp	Glu	Pro	Thr	Ala	Pro	Ser	Asp	Ile	Cys	Thr	Ala	Glu	Thr		
385					390					395					400		
Gly	Gly	Ile	Ala	Ala	Val	Ser	Phe	Pro	Gly	Arg	Ala	Ser	Pro	Glu	Pro		

	405		410		415
Arg Trp His Leu Met Gly Leu Val Ser Trp Ser Tyr Asp Lys Thr Cys					
	420		425		430
Ser His Arg Leu Ser Thr Ala Phe Thr Lys Val Leu Pro Phe Lys Asp					
	435		440		445
Trp Ile Glu Arg Asn Met Lys					
	450		455		

<210> 1402  
 <211> 323  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (283)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (296)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (298)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1402  
 Met Glu Leu Gly Cys Trp Thr Gln Leu Gly Leu Thr Phe Leu Gln Leu  
     1                    5                    10                    15  
 Leu Leu Ile Ser Ser Leu Pro Arg Glu Tyr Thr Val Ile Asn Glu Ala  
             20                    25                    30  
 Cys Pro Gly Ala Glu Trp Asn Ile Met Cys Arg Glu Cys Cys Glu Tyr  
             35                    40                    45  
 Asp Gln Ile Glu Cys Val Cys Pro Gly Lys Arg Glu Val Val Gly Tyr  
             50                    55                    60  
 Thr Ile Pro Cys Cys Arg Asn Glu Glu Asn Glu Cys Asp Ser Cys Leu  
     65                    70                    75                    80  
 Ile His Pro Gly Cys Thr Ile Phe Glu Asn Cys Lys Ser Cys Arg Asn  
             85                    90                    95  
 Gly Ser Trp Gly Gly Thr Leu Asp Asp Phe Tyr Val Lys Gly Phe Tyr  
             100                    105                    110  
 Cys Ala Glu Cys Arg Ala Gly Trp Tyr Gly Gly Asp Cys Met Arg Cys  
             115                    120                    125  
 Gly Gln Val Leu Arg Ala Pro Lys Gly Gln Ile Leu Leu Glu Ser Tyr  
     130                    135                    140

Pro Leu Asn Ala His Cys Glu Trp Thr Ile His Ala Lys Pro Gly Phe  
 145 150 155 160  
 Val Ile Gln Leu Arg Phe Val Met Leu Ser Leu Glu Phe Asp Tyr Met  
 165 170 175  
 Cys Gln Tyr Asp Tyr Val Glu Val Arg Asp Gly Asp Asn Arg Asp Gly  
 180 185 190  
 Gln Ile Ile Lys Arg Val Cys Gly Asn Glu Arg Pro Ala Pro Ile Gln  
 195 200 205  
 Ser Ile Gly Ser Ser Leu His Val Leu Phe His Ser Asp Gly Ser Lys  
 210 215 220  
 Asn Phe Asp Gly Phe His Ala Ile Tyr Glu Glu Ile Thr Ala Cys Ser  
 225 230 235 240  
 Ser Ser Pro Cys Phe His Asp Gly Thr Cys Val Leu Asp Lys Ala Gly  
 245 250 255  
 Ser Tyr Lys Cys Ala Cys Leu Ala Gly Tyr Thr Gly Gln Arg Cys Glu  
 260 265 270  
 Asn Leu Leu Glu Ala Gly Lys Ser Lys Ile Xaa Ala Ser Glu Asp Ser  
 275 280 285  
 Leu Ser Val Leu Glu Glu Arg Xaa Cys Xaa Asp Pro Gly Gly Pro Val  
 290 295 300  
 Asn Gly Tyr Gln Lys Ile Thr Gly Gly Pro Gly Leu Ile Asn Gly Arg  
 305 310 315 320  
 His Ala Lys

<210> 1403  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 1403

Met Ala Arg Ser Trp Leu Thr Ala Thr Ser Ala Ser Arg Val Gln Ala  
 1 5 10 15  
 Ile Leu Leu Leu Gly Leu Gln His Met Pro Pro Cys Pro Asp Tyr Phe  
 20 25 30  
 Phe Val Phe Val Val Glu Thr Gly Phe His His Val Ser Gln Ala Gly  
 35 40 45  
 Leu Glu Leu Leu Thr Ser Gly Asp Pro Pro Ala Ser Ala Ser His Thr  
 50 55 60  
 Ala Gly Ile Thr Gly Met Ser His Arg Ser Trp Pro Leu Phe Leu Phe  
 65 70 75 80

<210> 1404  
 <211> 121  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (114)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1404  
 Lys Leu Arg Leu Arg Glu Val Lys Ser Ile Ala Gln Gly His Val Ala  
     1                    5                    10                    15  
 Arg Ile Trp Gln Ser His Asp Ser Asp Pro Gly Leu Leu Ile Leu Ile  
                     20                    25                    30  
 Pro Val Ser Phe Leu Ala Tyr His Val Ala Ser Lys Asp Cys Ser Ser  
                     35                    40                    45  
 Leu Phe Thr Arg Lys Leu Phe Leu Pro Asn Leu His Leu His Leu Thr  
                     50                    55                    60  
 Pro Ser Phe Leu Lys His Tyr Val Cys Val Phe Ile Ser Ile Ile Phe  
                     65                    70                    75                    80  
 Ile Val Phe Gly Ile His Val Leu Val Cys Val Trp Lys Lys Asn Leu  
                     85                    90                    95  
 Phe Tyr Gln Leu Ala Leu Gly Pro Thr Trp Lys Lys Lys Ser Leu Asn  
                     100                    105                    110  
 Val Xaa Ala Met Tyr Ser Leu Lys Met  
                     115                    120

<210> 1405  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 1405  
 Met Ala Arg Ser Trp Leu Thr Ala Thr Ser Ala Ser Arg Val Gln Ala  
     1                    5                    10                    15  
 Ile Leu Leu Leu Gly Leu Gln His Met Pro Pro Cys Pro Asp Tyr Phe  
                     20                    25                    30  
 Phe Val Phe Val Val Glu Thr Gly Phe His His Val Ser Gln Ala Gly  
                     35                    40                    45  
 Leu Glu Leu Leu Thr Ser Gly Asp Pro Pro Ala Ser Ala Ser His Thr  
                     50                    55                    60



Ala Gly Ile Thr Gly Met Ser His Arg Ser Trp Pro Leu Phe Leu Phe  
 65 70 75 80

<210> 1406

<211> 83

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (82)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1406

Ile Trp Met His Phe Ile Ser Phe Leu Tyr Pro Ile Ala Leu Ala Thr  
 1 5 10 15

Thr Ser Ser Thr Val Leu Asn Arg Ser Gly Glu Cys Gly His Pro Cys  
 20 25 30

Leu Val Pro Val Leu Arg Glu Asn Ala Phe Ser Leu Ser Pro Phe Gly  
 35 40 45

Met Met Phe Ala Val Gly Leu Ser Tyr Met Ala Phe Phe Thr Leu Arg  
 50 55 60

Tyr Val Pro Ser Val Pro Ile Leu Leu Arg Val Phe Ile Ile Gln Glu  
 65 70 75 80

Cys Xaa Phe

<210> 1407

<211> 94

<212> PRT

<213> Homo sapiens

<400> 1407

Met His Phe Ile Ser Phe Leu Tyr Pro Ile Ala Leu Ala Thr Thr Ser  
 1 5 10 15

Ser Thr Val Leu Asn Arg Ser Gly Glu Cys Gly His Pro Cys Leu Val  
 20 25 30

Pro Val Leu Arg Glu Asn Ala Phe Ser Leu Ser Pro Phe Gly Met Met  
 35 40 45

Phe Ala Val Gly Leu Ser Tyr Met Ala Phe Phe Thr Leu Arg Tyr Val  
 50 55 60

Pro Ser Val Pro Ile Leu Leu Arg Val Phe Ile Ile Gln Glu Cys Trp  
 65 70 75 80

Ile Leu Ser Asn Ala Phe Ser Ala Ser Gly Glu Met Ile Ile  
                     85                                    90

<210> 1408

<211> 94

<212> PRT

<213> Homo sapiens

<400> 1408

Met His Phe Ile Ser Phe Leu Tyr Pro Ile Ala Leu Ala Thr Thr Ser  
   1                    5                                    10                                    15

Ser Thr Val Leu Asn Arg Ser Gly Glu Cys Gly His Pro Cys Leu Val  
                     20                                    25                                    30

Pro Val Leu Arg Glu Asn Ala Phe Ser Leu Ser Pro Phe Gly Met Met  
                     35                                    40                                    45

Phe Ala Val Gly Leu Ser Tyr Met Ala Phe Phe Thr Leu Arg Tyr Val  
                     50                                    55                                    60

Pro Ser Val Pro Ile Leu Leu Arg Val Phe Ile Ile Gln Glu Cys Trp  
   65                                    70                                    75                                    80

Ile Leu Ser Asn Ala Phe Ser Ala Ser Gly Glu Met Ile Ile  
                     85                                    90

<210> 1409

<211> 95

<212> PRT

<213> Homo sapiens

<400> 1409

Met Ile Leu Ile Arg Lys Leu Phe Leu Arg Arg Cys His Trp Gly Gly  
   1                    5                                    10                                    15

Trp Leu Leu Pro Pro Ala Arg Ala Ser Cys Ser Gly Lys His Ser Leu  
                     20                                    25                                    30

Ser His Ser Cys Arg Gly Pro Arg Val Gln Arg Pro Pro His Pro Arg  
                     35                                    40                                    45

Phe Trp Ala Gly Thr Leu Ala Pro Gly Pro Cys Pro Gly Leu Trp Cys  
                     50                                    55                                    60

Leu Pro Gly Leu Val Gln Val Asp Val Leu Ala Ala Gly Arg Cys Asp  
   65                                    70                                    75                                    80

His Leu Ser Cys Leu Pro Pro Leu Cys Pro Gln Ala Phe Leu Leu  
                     85                                    90                                    95

<210> 1410

<211> 92

<212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1410

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Met Pro Gly Cys Val Phe Cys Phe Leu Thr Leu Leu Phe His Ser Leu
 1              5              10              15

Ser Val Gly Gln Tyr Cys Cys Leu Ile Cys Val Cys Phe Val Leu Tyr
              20              25              30

Val Tyr Thr Gln Ile His Thr Arg Ile His Ile His Thr His Lys His
              35              40              45

Phe Phe Phe Pro Trp Arg Gln Gly Ile Ala Leu Ser Pro Arg Leu Glu
 50              55              60

Tyr Ser Ser Ala Ile Met Thr His Arg Leu Ile Ala Ala Leu Ala Ser
 65              70              75              80

Gln Ala Gln Ala Ile Leu Pro Pro Gln Pro Ser Glu
              85              90

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&lt;210&gt; 1411

&lt;211&gt; 225

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (66)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (101)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1411

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Met Ile His Val Arg His Cys Thr Pro Ile Pro Ala Leu Leu Val Cys
 1              5              10              15

Cys Gly Ala Thr Ala Val Ile Met Leu Val Gly Asp Thr Tyr Thr Leu
              20              25              30

Ile Asn Tyr Val Ser Phe Ile Asn Tyr Leu Cys Tyr Gly Val Thr Ile
              35              40              45

Leu Gly Leu Leu Leu Leu Arg Trp Arg Arg Pro Ala Leu His Arg Pro
 50              55              60

Ile Xaa Val Asn Leu Leu Ile Pro Val Ala Tyr Leu Val Phe Trp Ala
 65              70              75              80

Phe Leu Leu Val Phe Ser Phe Ile Ser Glu Pro Met Val Cys Gly Val
              85              90              95

Gly Val Ile Ile Xaa Leu Thr Gly Val Pro Ile Phe Phe Leu Gly Val
 100              105              110

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Phe Trp Arg Ser Lys Pro Lys Cys Val His Arg Leu Thr Glu Ser Met  
           115                                  120                                  125  
 Thr His Trp Gly Gln Glu Leu Cys Phe Val Val Tyr Pro Gln Asp Ala  
           130                                  135                                  140  
 Pro Glu Glu Glu Glu Asn Ala Pro Ala His Pro Pro Cys Cys Leu Pro  
 145                                  150                                  155                                  160  
 Gln Thr Ser Pro Arg Ser His Asn Glu Ile Phe Val Glu Thr Glu Ala  
                                   165                                  170                                  175  
 Val Val Ser Val Tyr Met Leu Phe Ile Glu Glu Val Phe Trp Gln Lys  
                                   180                                  185                                  190  
 Ser Phe Val Leu Phe Phe Ser Gly Lys Lys Arg Lys Lys Ile Arg Leu  
                                   195                                  200                                  205  
 Ser Glu Ala Cys Phe Lys Glu Ala Leu Lys Cys Gly Leu Gly Phe Leu  
           210                                  215                                  220  
 Ser  
 225

<210> 1412  
 <211> 172  
 <212> PRT  
 <213> Homo sapiens

<400> 1412  
 Met Ile His Val Arg His Cys Thr Pro Ile Pro Ala Leu Leu Val Cys  
   1                                  5                                  10                                  15  
 Cys Gly Ala Thr Ala Val Ile Met Leu Val Gly Asp Thr Tyr Thr Leu  
                                   20                                  25                                  30  
 Ile Asn Tyr Val Ser Phe Ile Asn Tyr Leu Cys Tyr Gly Val Thr Ile  
                                   35                                  40                                  45  
 Leu Gly Leu Leu Leu Leu Arg Trp Arg Arg Pro Ala Leu His Arg Pro  
           50                                  55                                  60  
 Ile Lys Val Asn Leu Leu Ile Pro Val Ala Tyr Leu Val Phe Trp Ala  
           65                                  70                                  75                                  80  
 Phe Leu Leu Val Phe Ser Phe Ile Ser Glu Pro Met Val Cys Gly Val  
                                   85                                  90                                  95  
 Gly Val Ile Ile Ile Leu Thr Gly Val Pro Ile Phe Phe Leu Gly Val  
                                   100                                  105                                  110  
 Phe Trp Arg Ser Lys Pro Lys Cys Val His Arg Leu Thr Glu Ser Met  
           115                                  120                                  125  
 Thr His Trp Gly Gln Glu Leu Cys Phe Val Val Tyr Pro Gln Asp Ala  
           130                                  135                                  140  
 Pro Glu Glu Glu Glu Glu Trp Pro Leu Pro Thr Leu Pro Ala Ala Cys

145

150

155

160

His Arg Gln Ala Leu Glu Ala Thr Met Arg Phe Leu  
 165 170

&lt;210&gt; 1413

&lt;211&gt; 225

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (66)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (101)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1413

Met Ile His Val Arg His Cys Thr Pro Ile Pro Ala Leu Leu Val Cys  
 1 5 10 15

Cys Gly Ala Thr Ala Val Ile Met Leu Val Gly Asp Thr Tyr Thr Leu  
 20 25 30

Ile Asn Tyr Val Ser Phe Ile Asn Tyr Leu Cys Tyr Gly Val Thr Ile  
 35 40 45

Leu Gly Leu Leu Leu Leu Arg Trp Arg Arg Pro Ala Leu His Arg Pro  
 50 55 60

Ile Xaa Val Asn Leu Leu Ile Pro Val Ala Tyr Leu Val Phe Trp Ala  
 65 70 75 80

Phe Leu Leu Val Phe Ser Phe Ile Ser Glu Pro Met Val Cys Gly Val  
 85 90 95

Gly Val Ile Ile Xaa Leu Thr Gly Val Pro Ile Phe Phe Leu Gly Val  
 100 105 110

Phe Trp Arg Ser Lys Pro Lys Cys Val His Arg Leu Thr Glu Ser Met  
 115 120 125

Thr His Trp Gly Gln Glu Leu Cys Phe Val Val Tyr Pro Gln Asp Ala  
 130 135 140

Pro Glu Glu Glu Glu Asn Ala Pro Ala His Pro Pro Cys Cys Leu Pro  
 145 150 155 160

Gln Thr Ser Pro Arg Ser His Asn Glu Ile Phe Val Glu Thr Glu Ala  
 165 170 175

Val Val Ser Val Tyr Met Leu Phe Ile Glu Glu Val Phe Trp Gln Lys  
 180 185 190

Ser Phe Val Leu Phe Phe Ser Gly Lys Lys Arg Lys Lys Ile Arg Leu



				85					90							95
Cys	Ser	Ser	Val	Asp	Phe	Ser	Val	Phe	Ser	Ala	Cys	Ser	Val	Pro	Val	
			100					105					110			
Val	Thr	Gly	Asp	Ser	Gln	Phe	Cys	Ser	Gln	Lys	Ala	Val	Ile	Tyr	Ser	
		115					120					125				
Leu	Asn	Phe	Thr	Ala	Asn	Pro	Pro	Gln	Arg	Val	Phe	Glu	Leu	Val	Asp	
	130					135					140					
Gln	Ile	Asn	Pro	Ser	Ile	Phe	Cys	Ile	His	Ile	Thr	Asn	Tyr	Lys	Pro	
145					150					155					160	
Ala	Leu	Ser	Phe	Ile	Asn	Pro	Glu	Val	Pro	Asp	Glu	Asn	Asn	Phe	Asp	
				165					170					175		
Thr	Leu	Met	Lys	Thr	Ser	Asp	Gly	Phe	Thr	Leu	Asn	Ala	Glu	Ser	Tyr	
			180					185					190			
Val	Ser	Phe	Thr	Thr	Lys	Leu	Asp	Ile	Pro	Thr	Ala	Ala	Lys	Tyr	Glu	
		195					200					205				
Tyr	Gly	Val	Pro	Leu	Gln	Thr	Ser	Asp	Ser	Phe	Leu	Arg	Phe	Pro	Ser	
	210					215					220					
Ser	Leu	Thr	Ser	Ser	Leu	Cys	Thr	Asp	Asn	Asn	Pro	Ala	Ala	Phe	Leu	
225					230				235						240	
Val	Asn	Gln	Ala	Val	Lys	Cys	Thr	Arg	Lys	Ile	Asn	Leu	Glu	Gln	Cys	
				245					250					255		
Glu	Glu	Ile	Glu	Ala	Leu	Ser	Met	Ala	Phe	Tyr	Ser	Ser	Pro	Glu	Ile	
			260					265					270			
Leu	Arg	Val	Pro	Asp	Ser	Arg	Lys	Lys	Val	Pro	Ile	Thr	Val	Gln	Ser	
		275					280					285				
Ile	Val	Ile	Gln	Ser	Leu	Asn	Lys	Thr	Leu	Thr	Arg	Arg	Glu	Asp	Thr	
	290					295					300					
Asp	Val	Leu	Gln	Pro	Thr	Leu	Val	Asn	Ala	Gly	His	Phe	Ser	Leu	Cys	
305					310					315					320	
Val	Asn	Val	Val	Leu	Glu	Val	Lys	Tyr	Ser	Leu	Thr	Tyr	Thr	Asp	Ala	
				325					330					335		
Gly	Glu	Val	Thr	Lys	Ala	Asp	Leu	Ser	Phe	Val	Leu	Gly	Thr	Val	Ser	
			340					345					350			
Ser	Val	Val	Val	Pro	Leu	Gln	Gln	Lys	Phe	Glu	Ile	His	Phe	Leu	Gln	
		355					360					365				
Glu	Asn	Thr	Gln	Pro	Val	Pro	Leu	Ser	Gly	Asn	Pro	Gly	Tyr	Val	Val	
	370					375					380					
Gly	Leu	Pro	Leu	Ala	Ala	Gly	Phe	Gln	Pro	His	Lys	Gly	Ser	Gly	Ile	
385					390					395					400	
Ile	Gln	Thr	Thr	Asn	Arg	Tyr	Gly	Gln	Leu	Thr	Ile	Leu	His	Ser	Thr	

405 410 415  
 Thr Glu Gln Asp Cys Leu Ala Leu Glu Gly Val Arg Thr Pro Val Leu  
 420 425 430  
 Phe Gly Tyr Thr Met Gln Ser Gly Cys Lys Leu Arg Leu Thr Gly Ala  
 435 440 445  
 Leu Pro Cys Gln Leu Val Ala Gln Lys Val Lys Ser Leu Leu Trp Gly  
 450 455 460  
 Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser Gln Ala Gln  
 465 470 475 480  
 Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln Ser Phe Asn  
 485 490 495  
 Arg Lys Asp Ser Cys Gln Leu Pro Gly Ala Leu Val Ile Glu Val Lys  
 500 505 510  
 Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln Ala Lys Ile Val Asn  
 515 520 525  
 Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro Glu Ala Asn Ser Gly  
 530 535 540  
 Asn Glu Arg Thr Ile Leu Ile Ser Thr Ala Val Thr Phe Val Asp Val  
 545 550 555 560  
 Ser Ala Pro Ala Glu Ala Gly Phe Arg Ala Pro Pro Ala Ile Asn Ala  
 565 570 575  
 Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val  
 580 585

<210> 1416  
 <211> 157  
 <212> PRT  
 <213> Homo sapiens

<400> 1416  
 Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys  
 1 5 10 15  
 Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr  
 20 25 30  
 Glu Gly Leu Asn Ser Thr Glu Ala Ala Leu Ala Thr Phe Gly Thr Phe  
 35 40 45  
 Pro Ser Thr Arg Pro Pro Gly Thr Pro Arg Ala Pro Gly Pro Ser Ser  
 50 55 60  
 Gly Pro Arg Pro Thr Pro Val Thr Asp Val Ala Val Leu Cys Val Cys  
 65 70 75 80  
 Asp Leu Ser Pro Ala Gln Cys Asp Ile Asn Cys Cys Cys Asp Pro Asp  
 85 90 95



Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val  
                   100                  105                  110

Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser  
                   115                  120                  125

Leu Asn Phe Thr Ala Asn Pro Pro Gln Arg Val Phe Glu Leu Val Asp  
           130                  135                  140

Gln Ile Asn Pro Ser Ile Phe Cys Ile His Ile Thr Asn  
   145                  150                  155

&lt;210&gt; 1417

&lt;211&gt; 587

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1417

Met Arg Pro Arg Gly Leu Pro Pro Leu Leu Val Val Leu Leu Gly Cys  
   1                  5                  10                  15

Trp Ala Ser Val Ser Ala Gln Thr Asp Ala Thr Pro Ala Val Thr Thr  
                   20                  25                  30

Glu Gly Leu Asn Ser Thr Glu Ala Ala Leu Ala Thr Phe Gly Thr Phe  
                   35                  40                  45

Pro Ser Thr Arg Pro Pro Gly Thr Pro Arg Ala Pro Gly Pro Ser Ser  
                   50                  55                  60

Gly Pro Arg Pro Thr Pro Val Thr Asp Val Ala Val Leu Cys Val Cys  
   65                  70                  75                  80

Asp Leu Ser Pro Ala Gln Cys Asp Ile Asn Cys Cys Cys Asp Pro Asp  
                   85                  90                  95

Cys Ser Ser Val Asp Phe Ser Val Phe Ser Ala Cys Ser Val Pro Val  
                   100                  105                  110

Val Thr Gly Asp Ser Gln Phe Cys Ser Gln Lys Ala Val Ile Tyr Ser  
                   115                  120                  125

Leu Asn Phe Thr Ala Asn Pro Pro Gln Arg Val Phe Glu Leu Val Asp  
   130                  135                  140

Gln Ile Asn Pro Ser Ile Phe Cys Ile His Ile Thr Asn Tyr Lys Pro  
   145                  150                  155                  160

Ala Leu Ser Phe Ile Asn Pro Glu Val Pro Asp Glu Asn Asn Phe Asp  
                   165                  170                  175

Thr Leu Met Lys Thr Ser Asp Gly Phe Thr Leu Asn Ala Glu Ser Tyr  
                   180                  185                  190

Val Ser Phe Thr Thr Lys Leu Asp Ile Pro Thr Ala Ala Lys Tyr Glu  
                   195                  200                  205

Tyr Gly Val Pro Leu Gln Thr Ser Asp Ser Phe Leu Arg Phe Pro Ser  
 210 215 220  
 Ser Leu Thr Ser Ser Leu Cys Thr Asp Asn Asn Pro Ala Ala Phe Leu  
 225 230 235 240  
 Val Asn Gln Ala Val Lys Cys Thr Arg Lys Ile Asn Leu Glu Gln Cys  
 245 250 255  
 Glu Glu Ile Glu Ala Leu Ser Met Ala Phe Tyr Ser Ser Pro Glu Ile  
 260 265 270  
 Leu Arg Val Pro Asp Ser Arg Lys Lys Val Pro Ile Thr Val Gln Ser  
 275 280 285  
 Ile Val Ile Gln Ser Leu Asn Lys Thr Leu Thr Arg Arg Glu Asp Thr  
 290 295 300  
 Asp Val Leu Gln Pro Thr Leu Val Asn Ala Gly His Phe Ser Leu Cys  
 305 310 315 320  
 Val Asn Val Val Leu Glu Val Lys Tyr Ser Leu Thr Tyr Thr Asp Ala  
 325 330 335  
 Gly Glu Val Thr Lys Ala Asp Leu Ser Phe Val Leu Gly Thr Val Ser  
 340 345 350  
 Ser Val Val Val Pro Leu Gln Gln Lys Phe Glu Ile His Phe Leu Gln  
 355 360 365  
 Glu Asn Thr Gln Pro Val Pro Leu Ser Gly Asn Pro Gly Tyr Val Val  
 370 375 380  
 Gly Leu Pro Leu Ala Ala Gly Phe Gln Pro His Lys Gly Ser Gly Ile  
 385 390 395 400  
 Ile Gln Thr Thr Asn Arg Tyr Gly Gln Leu Thr Ile Leu His Ser Thr  
 405 410 415  
 Thr Glu Gln Asp Cys Leu Ala Leu Glu Gly Val Arg Thr Pro Val Leu  
 420 425 430  
 Phe Gly Tyr Thr Met Gln Ser Gly Cys Lys Leu Arg Leu Thr Gly Ala  
 435 440 445  
 Leu Pro Cys Gln Leu Val Ala Gln Lys Val Lys Ser Leu Leu Trp Gly  
 450 455 460  
 Gln Gly Phe Pro Asp Tyr Val Ala Pro Phe Gly Asn Ser Gln Ala Gln  
 465 470 475 480  
 Asp Met Leu Asp Trp Val Pro Ile His Phe Ile Thr Gln Ser Phe Asn  
 485 490 495  
 Arg Lys Asp Ser Cys Gln Leu Pro Gly Ala Leu Val Ile Glu Val Lys  
 500 505 510  
 Trp Thr Lys Tyr Gly Ser Leu Leu Asn Pro Gln Ala Lys Ile Val Asn  
 515 520 525

Val Thr Ala Asn Leu Ile Ser Ser Ser Phe Pro Glu Ala Asn Ser Gly  
 530 535 540

Asn Glu Arg Thr Ile Leu Ile Ser Thr Ala Val Thr Phe Val Asp Val  
 545 550 555 560

Ser Ala Pro Ala Glu Ala Gly Phe Arg Ala Pro Pro Ala Ile Asn Ala  
 565 570 575

Arg Leu Pro Phe Asn Phe Phe Phe Pro Phe Val  
 580 585

<210> 1418

<211> 137

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (52)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (117)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (133)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (137)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1418

Met Val Glu Glu Pro Gly Arg Phe Leu Pro Leu Trp Leu His Ile Leu  
 1 5 10 15

Leu Ile Thr Val Leu Leu Val Leu Ser Gly Ile Phe Ser Gly Leu Asn  
 20 25 30

Leu Gly Leu Met Ala Leu Asp Pro Met Glu Leu Arg Ile Val Gln Asn  
 35 40 45

Cys Gly Thr Xaa Lys Glu Arg Arg Tyr Ala Arg Lys Ile Glu Pro Ile  
 50 55 60

Arg Arg Lys Gly Asn Tyr Leu Leu Cys Ser Leu Leu Leu Gly Asn Val  
 65 70 75 80

Leu Val Asn Thr Ser Leu Thr Ile Leu Leu Asp Asn Leu Ile Gly Ser  
 85 90 95

Gly Leu Met Ala Val Ala Ser Phe Thr Ile Gly Ile Cys His Leu Trp  
 100 105 110

Gly Asp Pro Thr Xaa Gly Pro Cys Ala Pro Arg His Gly Ala Trp Leu  
 115 120 125

Val Gly Cys Gln Xaa Pro Cys Phe Xaa  
 130 135

<210> 1419

<211> 157

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (90)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1419

Leu Lys Pro Phe Ser Gln Thr Pro Tyr Phe Glu Ser Pro Ser Phe Ser  
 1 5 10 15

Pro Ser Trp Gly Trp Arg Gln Glu Asp Met Trp Glu Ala Thr Glu Ala  
 20 25 30

Gly Ser Leu Cys Pro Leu Leu Cys Gly Trp Gln Gly Ser Pro Gly Leu  
 35 40 45

Ile His Pro Leu Met Glu Pro Gln Glu Arg Arg Ala Pro Pro Lys Gly  
 50 55 60

Met Gln Leu Ala Ala Pro Leu Ser His Thr Cys Asp Pro Ser Val Arg  
 65 70 75 80

Gly His Pro Ala Leu Ala Glu Val Ser Xaa Thr Val Leu Arg Ala Leu  
 85 90 95

Pro Ser Cys Glu Phe Leu Pro Trp Arg Leu Phe Pro Gly Ala Glu Ser  
 100 105 110

Gly Pro Ala Ala Lys Leu Gln Ala Ser Gln Gly Trp Gly Gly Cys Gly  
 115 120 125

Thr Lys Val His Val Gly Pro Ser Thr Gly Cys Ser Arg Ser Trp Val  
 130 135 140

Pro Arg Ala Trp Gln Val Lys Leu Cys Arg Pro Ser Ala  
 145 150 155

<210> 1420

<211> 631

<212> PRT

<213> Homo sapiens

<400> 1420

Met Lys Leu Tyr Ala Leu Cys Thr Arg Ala Gln Pro Asp Gly Pro Trp  
 1 5 10 15

Leu Lys Trp Thr Asp Lys Asp Ser Leu Leu Phe Met Val Glu Glu Pro  
 20 25 30  
 Gly Arg Phe Leu Pro Leu Trp Leu His Ile Leu Leu Ile Thr Val Leu  
 35 40 45  
 Leu Val Leu Ser Gly Ile Phe Ser Gly Leu Asn Leu Gly Leu Met Ala  
 50 55 60  
 Leu Asp Pro Met Glu Leu Arg Ile Val Gln Asn Cys Gly Thr Glu Lys  
 65 70 75 80  
 Glu Arg Arg Tyr Ala Arg Lys Ile Glu Pro Ile Arg Arg Lys Gly Asn  
 85 90 95  
 Tyr Leu Leu Cys Ser Leu Leu Leu Gly Asn Val Leu Val Asn Thr Ser  
 100 105 110  
 Leu Thr Ile Leu Leu Asp Asn Leu Ile Gly Ser Gly Leu Met Ala Val  
 115 120 125  
 Ala Ser Ser Thr Ile Gly Ile Val Ile Phe Gly Glu Ile Leu Pro Gln  
 130 135 140  
 Ala Leu Cys Ser Arg His Gly Leu Ala Val Gly Ala Asn Thr Ile Leu  
 145 150 155 160  
 Leu Thr Lys Phe Phe Met Leu Leu Thr Phe Pro Leu Ser Phe Pro Ile  
 165 170 175  
 Ser Lys Leu Leu Asp Phe Phe Leu Gly Gln Glu Ile Arg Thr Val Tyr  
 180 185 190  
 Asn Arg Glu Lys Leu Met Glu Met Leu Lys Val Thr Glu Pro Tyr Asn  
 195 200 205  
 Asp Leu Val Lys Glu Glu Leu Asn Met Ile Gln Gly Ala Leu Glu Leu  
 210 215 220  
 Arg Thr Lys Thr Val Glu Asp Ile Met Thr Gln Leu Gln Asp Cys Phe  
 225 230 235 240  
 Met Ile Arg Ser Asp Ala Ile Leu Asp Phe Asn Thr Met Ser Glu Ile  
 245 250 255  
 Met Glu Ser Gly Tyr Thr Arg Ile Pro Val Phe Glu Asp Glu Gln Ser  
 260 265 270  
 Asn Ile Val Asp Ile Leu Tyr Val Lys Asp Leu Ala Phe Val Asp Pro  
 275 280 285  
 Asp Asp Cys Thr Pro Leu Lys Thr Ile Thr Arg Phe Tyr Asn His Pro  
 290 295 300  
 Val His Phe Val Phe His Asp Thr Lys Leu Asp Ala Met Leu Glu Glu  
 305 310 315 320  
 Phe Lys Lys Gly Lys Ser His Leu Ala Ile Val Gln Lys Val Asn Asn  
 325 330 335

Glu Gly Glu Gly Asp Pro Phe Tyr Glu Val Leu Gly Leu Val Thr Leu  
 340 345 350  
 Glu Asp Val Ile Glu Glu Ile Ile Lys Ser Glu Ile Leu Asp Glu Ser  
 355 360 365  
 Asp Met Tyr Thr Asp Asn Arg Ser Arg Lys Arg Val Ser Glu Lys Asn  
 370 375 380  
 Lys Arg Asp Phe Ser Ala Phe Lys Asp Ala Asp Asn Glu Leu Lys Val  
 385 390 395 400  
 Lys Ile Ser Pro Gln Leu Leu Leu Ala Ala His Arg Phe Leu Ala Thr  
 405 410 415  
 Glu Val Ser Gln Phe Ser Pro Ser Leu Ile Ser Glu Lys Ile Leu Leu  
 420 425 430  
 Arg Leu Leu Lys Tyr Pro Asp Val Ile Gln Glu Leu Lys Phe Asp Glu  
 435 440 445  
 His Asn Lys Tyr Tyr Ala Arg His Tyr Leu Tyr Thr Arg Asn Lys Pro  
 450 455 460  
 Ala Asp Tyr Phe Ile Leu Ile Leu Gln Gly Lys Val Glu Val Glu Ala  
 465 470 475 480  
 Gly Lys Glu Asn Met Lys Phe Glu Thr Gly Ala Phe Ser Tyr Tyr Gly  
 485 490 495  
 Thr Met Ala Leu Thr Ser Val Pro Ser Asp Arg Ser Pro Ala His Pro  
 500 505 510  
 Thr Pro Leu Ser Arg Ser Ala Ser Leu Ser Tyr Pro Asp Arg Thr Asp  
 515 520 525  
 Val Ser Thr Ala Ala Thr Leu Ala Gly Ser Ser Asn Gln Phe Gly Ser  
 530 535 540  
 Ser Val Leu Gly Gln Tyr Ile Ser Asp Phe Ser Val Arg Ala Leu Val  
 545 550 555 560  
 Asp Leu Gln Tyr Ile Lys Ile Thr Arg Gln Gln Tyr Gln Asn Gly Leu  
 565 570 575  
 Leu Ala Ser Arg Met Glu Asn Ser Pro Gln Phe Pro Ile Asp Gly Cys  
 580 585 590  
 Thr Thr His Met Glu Asn Leu Ala Glu Lys Ser Glu Leu Pro Val Val  
 595 600 605  
 Asp Glu Thr Thr Thr Leu Leu Asn Glu Arg Asn Ser Leu Leu His Lys  
 610 615 620  
 Ala Ser His Glu Asn Ala Ile  
 625 630

&lt;210&gt; 1421

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1421

Met Gly Val Arg Val Trp Glu Leu Pro Ala Gln Pro Thr Gly Leu His  
 1 5 10 15

Leu Leu Cys Phe Cys Thr Arg Thr Met Leu Leu Ala Leu Lys Leu Pro  
 20 25 30

Lys Thr Lys His Ser Phe Pro Asp Pro Tyr Thr Ser Ile Leu Ser Phe  
 35 40 45

Ile His Pro Ala Phe Thr Glu Asn Leu Thr Leu Cys Gln Val Ser Val  
 50 55 60

Phe Leu Ser Ser Ser Asn Thr Glu Met Asn Gln Met Phe His Gly Val  
 65 70 75 80

Ser Phe Arg

&lt;210&gt; 1422

&lt;211&gt; 103

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (86)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (87)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (93)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (94)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (96)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1422

Met Met Ala Ser Ile Gln Ser Phe Ser Ala Met Ala Leu Leu Phe Tyr  
 1 5 10 15

Thr Val Phe Met Phe Val Ile Val Leu Ser Ser Leu Lys His Gly Leu  
                   20                                  25                                  30  
 Phe Ser Gly Gln Trp Leu Arg Arg Val Ser Tyr Val Arg Trp Glu Gly  
                   35                                  40                                  45  
 Val Phe Arg Cys Ile Pro Ile Phe Gly Met Ser Phe Ala Cys Gln Ser  
                   50                                  55                                  60  
 Gln Val Leu Pro Thr Tyr Asp Ser Leu Asp Glu Pro Ser Val Lys Thr  
                   65                                  70                                  75                                  80  
 Met Ser Ser Ile Phe Xaa Xaa Ser Leu Asn Val Val Xaa Xaa Phe Xaa  
                                   85                                  90                                  95  
 Val Met Val Gly Val Phe Arg  
                                   100

<210> 1423  
 <211> 384  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (96)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (131)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1423  
 Gln Arg Gln Glu Asp Glu Glu Asp Lys Pro Arg Gln Val Glu Val His  
   1                                  5                                  10                                  15  
 Gln Glu Pro Gly Ala Ala Val Pro Arg Gly Gln Glu Ala Pro Glu Gly  
                   20                                  25                                  30  
 Lys Ala Arg Glu Thr Val Glu Asn Leu Pro Pro Leu Pro Leu Asp Pro  
                   35                                  40                                  45  
 Val Leu Arg Ala Pro Gly Gly Arg Pro Ala Pro Ser Gln Asp Leu Asn  
                   50                                  55                                  60  
 Gln Arg Ser Leu Glu His Ser Glu Gly Pro Val Gly Arg Asp Pro Ala  
                   65                                  70                                  75                                  80  
 Gly Pro Pro Asp Gly Gly Pro Asp Thr Glu Pro Arg Ala Ala Gln Xaa  
                                   85                                  90                                  95  
 Lys Leu Arg Asp Gly Gln Lys Asp Ala Ala Pro Arg Ala Ala Gly Thr  
                   100                                  105                                  110  
 Val Lys Glu Leu Pro Lys Gly Pro Glu Gln Val Pro Val Pro Asp Pro  
                   115                                  120                                  125



Ala Arg Xaa Ala Gly Gly Pro Glu Glu Arg Leu Ala Glu Glu Phe Pro  
 130 135 140  
 Gly Gln Ser Gln Asp Val Thr Gly Gly Ser Gln Asp Arg Lys Lys Pro  
 145 150 155 160  
 Gly Lys Glu Val Ala Ala Thr Gly Thr Ser Ile Leu Lys Glu Ala Asn  
 165 170 175  
 Trp Leu Val Ala Gly Pro Gly Ala Glu Thr Gly Asp Pro Arg Met Lys  
 180 185 190  
 Pro Lys Gln Val Ser Arg Asp Leu Gly Leu Ala Ala Asp Leu Pro Gly  
 195 200 205  
 Gly Ala Glu Gly Ala Ala Ala Gln Pro Gln Ala Val Leu Arg Gln Pro  
 210 215 220  
 Glu Leu Arg Val Ile Ser Asp Gly Glu Gln Gly Gly Gln Gln Gly His  
 225 230 235 240  
 Arg Leu Asp His Gly Gly His Leu Glu Met Arg Lys Ala Arg Gly Gly  
 245 250 255  
 Asp His Val Pro Val Ser His Glu Gln Pro Arg Gly Gly Glu Asp Ala  
 260 265 270  
 Ala Val Gln Glu Pro Arg Gln Arg Pro Glu Pro Glu Leu Gly Leu Lys  
 275 280 285  
 Arg Ala Val Pro Gly Gly Gln Arg Pro Asp Asn Ala Lys Pro Asn Arg  
 290 295 300  
 Asp Leu Lys Leu Gln Ala Gly Ser Asp Leu Arg Arg Arg Arg Arg Asp  
 305 310 315 320  
 Leu Gly Pro His Ala Glu Gly Gln Leu Ala Pro Arg Asp Gly Val Ile  
 325 330 335  
 Ile Gly Leu Asn Pro Leu Pro Asp Val Gln Val Asn Asp Leu Arg Gly  
 340 345 350  
 Ala Leu Asp Ala Gln Leu Arg Gln Ala Ala Gly Gly Ala Leu Gln Val  
 355 360 365  
 Val His Ser Arg Gln Leu Arg Gln Ala Pro Gly Pro Pro Glu Glu Ser  
 370 375 380

&lt;210&gt; 1424

&lt;211&gt; 973

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1424

Met Met Ala Ser Ile Gln Ser Phe Ser Ala Met Ala Leu Leu Phe Tyr

1	5	10	15
Thr Val Phe Met Phe Val Ile Val Leu Ser Ser Leu Lys His Gly Leu	20	25	30
Phe Ser Gly Gln Trp Leu Arg Arg Val Ser Tyr Val Arg Trp Glu Gly	35	40	45
Val Phe Arg Cys Ile Pro Ile Phe Gly Met Ser Phe Ala Cys Gln Ser	50	55	60
Gln Val Leu Pro Thr Tyr Asp Ser Leu Asp Glu Pro Ser Val Lys Thr	65	70	75
Met Ser Ser Ile Phe Ala Ser Ser Leu Asn Val Val Thr Thr Phe Tyr	85	90	95
Val Met Val Gly Phe Phe Gly Tyr Val Ser Phe Thr Glu Ala Thr Ala	100	105	110
Gly Asn Val Leu Met His Phe Pro Ser Asn Leu Val Thr Glu Met Leu	115	120	125
Arg Val Gly Phe Met Met Ser Val Ala Val Gly Phe Pro Met Met Ile	130	135	140
Leu Pro Cys Arg Gln Ala Leu Ser Thr Leu Leu Cys Glu Gln Gln Gln	145	150	155
Lys Asp Gly Thr Phe Ala Ala Gly Gly Tyr Met Pro Pro Leu Arg Phe	165	170	175
Lys Ala Leu Thr Leu Ser Val Val Phe Gly Thr Met Val Gly Gly Ile	180	185	190
Leu Ile Pro Asn Val Glu Thr Ile Leu Gly Leu Thr Gly Ala Thr Met	195	200	205
Gly Ser Leu Ile Cys Phe Ile Cys Pro Ala Leu Ile Tyr Lys Lys Ile	210	215	220
His Lys Asn Ala Leu Ser Ser Gln Val Val Leu Trp Val Gly Leu Gly	225	230	235
Val Leu Val Val Ser Thr Val Thr Thr Leu Ser Val Ser Glu Glu Val	245	250	255
Pro Glu Asp Leu Ala Glu Glu Ala Pro Gly Gly Arg Leu Gly Glu Ala	260	265	270
Glu Gly Leu Met Lys Val Glu Ala Ala Arg Leu Ser Ala Gln Asp Pro	275	280	285
Val Val Ala Val Ala Glu Asp Gly Arg Glu Lys Pro Lys Leu Pro Lys	290	295	300
Glu Arg Glu Glu Leu Glu Gln Ala Gln Ile Lys Gly Pro Val Asp Val	305	310	315
Pro Gly Arg Glu Asp Gly Lys Glu Ala Pro Glu Glu Ala Gln Leu Asp			

325								330				335			
Arg	Pro	Gly	Gln	Gly	Ile	Ala	Val	Pro	Val	Gly	Glu	Ala	His	Arg	His
			340					345					350		
Glu	Pro	Pro	Val	Pro	His	Asp	Lys	Val	Val	Val	Asp	Glu	Gly	Gln	Asp
	355						360					365			
Arg	Glu	Val	Pro	Glu	Glu	Asn	Lys	Pro	Pro	Ser	Arg	His	Ala	Gly	Gly
	370					375					380				
Lys	Ala	Pro	Gly	Val	Gln	Gly	Gln	Met	Ala	Pro	Pro	Leu	Pro	Asp	Ser
385					390					395					400
Glu	Arg	Glu	Lys	Gln	Glu	Pro	Glu	Gln	Gly	Glu	Val	Gly	Lys	Arg	Pro
				405					410					415	
Gly	Gln	Ala	Gln	Ala	Leu	Glu	Glu	Ala	Gly	Asp	Leu	Pro	Glu	Asp	Pro
			420					425					430		
Gln	Lys	Val	Pro	Glu	Ala	Asp	Gly	Gln	Pro	Ala	Val	Gln	Pro	Ala	Lys
		435					440					445			
Glu	Asp	Leu	Gly	Pro	Gly	Asp	Arg	Gly	Leu	His	Pro	Arg	Pro	Gln	Ala
	450					455					460				
Val	Leu	Ser	Glu	Gln	Gln	Asn	Gly	Leu	Ala	Val	Gly	Gly	Gly	Glu	Lys
465					470					475					480
Ala	Lys	Gly	Gly	Pro	Pro	Pro	Gly	Asn	Ala	Ala	Gly	Asp	Thr	Gly	Gln
				485					490					495	
Pro	Ala	Glu	Asp	Ser	Asp	His	Gly	Gly	Lys	Pro	Pro	Leu	Pro	Ala	Glu
			500					505					510		
Lys	Pro	Ala	Pro	Gly	Pro	Gly	Leu	Pro	Pro	Glu	Pro	Arg	Glu	Gln	Arg
		515					520					525			
Asp	Val	Glu	Arg	Ala	Gly	Gly	Asn	Gln	Ala	Ala	Ser	Gln	Leu	Glu	Glu
	530					535					540				
Ala	Gly	Arg	Ala	Glu	Met	Leu	Asp	His	Ala	Val	Leu	Leu	Gln	Val	Ile
545					550					555					560
Lys	Glu	Gln	Gln	Val	Gln	Gln	Lys	Arg	Leu	Leu	Asp	Gln	Gln	Glu	Lys
				565					570					575	
Leu	Leu	Ala	Val	Ile	Glu	Glu	Gln	His	Lys	Glu	Ile	His	Gln	Gln	Arg
			580					585					590		
Gln	Glu	Asp	Glu	Glu	Asp	Lys	Pro	Arg	Gln	Val	Glu	Val	His	Gln	Glu
		595					600					605			
Pro	Gly	Ala	Ala	Val	Pro	Arg	Gly	Gln	Glu	Ala	Pro	Glu	Gly	Lys	Ala
	610					615					620				
Arg	Glu	Thr	Val	Glu	Asn	Leu	Pro	Pro	Leu	Pro	Leu	Asp	Pro	Val	Leu
625					630				635						640
Arg	Ala	Pro	Gly	Gly	Arg	Pro	Ala	Pro	Ser	Gln	Asp	Leu	Asn	Gln	Arg

	645		650		655
Ser Leu Glu His	Ser Glu Gly Pro	Val Gly Arg Asp	Pro Ala Gly Pro		
660		665	670		
Pro Asp Gly Gly	Pro Asp Thr Glu	Pro Arg Ala Ala	Gln Gly Lys Leu		
675		680	685		
Arg Asp Gly Gln	Lys Asp Ala Ala	Pro Arg Ala Ala	Gly Thr Val Lys		
690		695	700		
Glu Leu Pro Lys	Gly Pro Glu Gln	Val Pro Val Pro	Asp Pro Ala Arg		
705		710	715		720
Glu Ala Gly Gly	Pro Glu Glu Arg	Leu Ala Glu Glu	Phe Pro Gly Gln		
	725	730	735		
Ser Gln Asp Val	Thr Gly Gly Ser	Gln Asp Arg Lys	Lys Pro Gly Lys		
740		745	750		
Glu Val Ala Ala	Thr Gly Thr Ser	Ile Leu Lys Glu	Ala Asn Trp Leu		
755		760	765		
Val Ala Gly Pro	Gly Ala Glu Thr	Gly Asp Pro Arg	Met Lys Pro Lys		
770		775	780		
Gln Val Ser Arg	Asp Leu Gly Leu	Ala Ala Asp Leu	Pro Gly Gly Ala		
785		790	795		800
Glu Gly Ala Ala	Ala Gln Pro Gln	Ala Val Leu Arg	Gln Pro Glu Leu		
	805	810	815		
Arg Val Ile Ser	Asp Gly Glu Gln	Gly Gly Gln Gln	Gly His Arg Leu		
820		825	830		
Asp His Gly Gly	His Leu Glu Met	Arg Lys Ala Arg	Gly Gly Asp His		
835		840	845		
Val Pro Val Ser	His Glu Gln Pro	Arg Gly Gly Glu	Asp Ala Ala Val		
850		855	860		
Gln Glu Pro Arg	Gln Arg Pro Glu	Pro Glu Leu Gly	Leu Lys Arg Ala		
865		870	875		880
Val Pro Gly Gly	Gln Arg Pro Asp	Asn Ala Lys Pro	Asn Arg Asp Leu		
	885	890	895		
Lys Leu Gln Ala	Gly Ser Asp Leu	Arg Arg Arg Arg	Arg Asp Leu Gly		
	900	905	910		
Pro His Ala Glu	Gly Gln Leu Ala	Pro Arg Asp Gly	Val Ile Gly Leu		
	915	920	925		
Asn Pro Leu Pro	Asp Val Gln Val	Asn Asp Leu Arg	Gly Ala Leu Asp		
930		935	940		
Ala Gln Leu Arg	Gln Ala Ala Gly	Gly Ala Leu Gln	Val Val His Ser		
945		950	955		960
Arg Gln Leu Arg	Gln Ala Pro Gly	Pro Pro Glu Glu	Ser		
		862			

965

970

&lt;210&gt; 1425

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (89)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (96)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (104)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1425

Met	Tyr	Leu	Gln	Ile	Pro	Val	Lys	His	Met	Leu	His	Ser	Gly	Tyr	Gln
1				5					10					15	

Ala	Thr	Phe	Phe	Ser	Pro	Lys	Ile	Gly	Cys	Ser	Ser	Ile	Leu	Val	Phe
			20					25					30		

Val	Cys	Leu	Leu	Val	Phe	Leu	Arg	Gln	Ser	Leu	Ala	Leu	Leu	Pro	Arg
	35						40					45			

Leu	Glu	Tyr	Ser	Gly	Ala	Ile	Leu	Ala	His	Cys	Asn	Leu	His	Leu	Leu
	50					55					60				

Gly	Ser	Ser	Asp	Ser	Pro	Ala	Ser	Ala	Ser	Pro	Val	Ala	Gly	Ile	Thr
	65				70					75					80

Gly	Met	His	His	His	Thr	Gln	Leu	Xaa	Phe	Cys	Thr	Phe	Ser	Arg	Xaa
				85					90					95	

Gly	Ile	Tyr	Gln	Leu	Ala	Ser	Xaa	Ser	Pro	Asn	Pro	Asp	Leu
			100					105					110

&lt;210&gt; 1426

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1426

Phe	Asn	Thr	Pro	Lys	Ile	Phe	Phe	Gly	Thr	Tyr	His	Arg	Gln	Gly	Thr
1				5					10					15	

Leu	Ile	Ser	Thr	Gly	Asp	Thr	Ile	Ser	Cys	Leu	Gly	Leu	Leu	Cys	Ser
			20					25					30		

Ser Ala Ala Arg Glu Gly Ile Ala Ile Cys Arg Ile Leu Lys Lys His  
           35                                  40                                  45

Lys His Lys Gly Ala Lys Leu Tyr Ile  
       50                                  55

&lt;210&gt; 1427

&lt;211&gt; 127

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1427

Met Leu His Ser Gly Tyr Gln Ala Thr Phe Phe Ser Pro Lys Ile Gly  
   1                                  5                                  10                                  15

Cys Ser Ser Ile Leu Val Phe Val Cys Leu Leu Val Phe Leu Arg Gln  
                                   20                                  25                                  30

Ser Leu Ala Leu Leu Pro Arg Leu Glu Tyr Ser Gly Ala Ile Leu Ala  
                                   35                                  40                                  45

His Cys Asn Leu His Leu Leu Gly Ser Ser Asp Ser Pro Ala Ser Ala  
       50                                  55                                  60

Ser Pro Val Ala Gly Ile Thr Gly Met His His His Thr Gln Leu Phe  
       65                                  70                                  75                                  80

Phe Cys Thr Phe Ser Arg Asp Gly Ile Leu Pro Cys Trp Pro Gly Trp  
                                   85                                  90                                  95

Ser Pro Thr Pro Asp Leu Arg Gln Ser Thr Leu Leu Ser Leu Pro Lys  
                                   100                                  105                                  110

Cys Trp Asp Tyr Arg His Glu Pro Leu Arg Pro Ala Gln Ala Phe  
                                   115                                  120                                  125

&lt;210&gt; 1428

&lt;211&gt; 80

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1428

Met Phe Ile Pro Gln Leu Pro Ala Leu Gly Leu Thr Ser Leu Met Met  
   1                                  5                                  10                                  15

Ala Ile Ser Leu Asn Val Ser Val Ser Gln Gly Leu Ser Ser Ala Cys  
                                   20                                  25                                  30

Met His Leu Arg Met Gln Ala Cys Lys Pro Thr Arg Val Gln Ala Lys  
                                   35                                  40                                  45

Val Leu Gly Asp Trp Val Gln Glu Asn His Val Ile Glu Asn Gly Ala  
       50                                  55                                  60

Thr Leu Arg Pro Trp Gln Asp Pro Leu His Asp Lys Tyr Arg Met Lys  
       65                                  70                                  75                                  80

<210> 1429  
 <211> 73  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (38)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1429  
 His Phe Ser Phe Trp Phe Ile His Phe Pro His Phe His Leu Lys Ile  
     1                    5                    10                    15  
 Leu Thr Lys Cys Leu Ala Glu Phe Ser Lys Tyr Asn Asn Phe Thr Leu  
             20                    25                    30  
 Pro Ala Asp Asn Glu Xaa Ile Arg Val Gln Asn Pro Phe Gln Leu Ser  
             35                    40                    45  
 Lys His Leu Leu Ser Leu Tyr Phe Val Ser Asp Thr Gly Val Lys Phe  
     50                    55                    60  
 Trp Lys Cys Lys Arg Asn Leu His Leu  
     65                    70

<210> 1430  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 1430  
 Met Phe Ile Pro Gln Leu Pro Ala Leu Gly Leu Thr Ser Leu Met Met  
     1                    5                    10                    15  
 Ala Ile Ser Leu Asn Val Ser Val Ser Gln Gly Leu Ser Ser Ala Cys  
             20                    25                    30  
 Met His Leu Arg Met Gln Ala Cys Lys Pro Thr Arg Val Gln Ala Lys  
     35                    40                    45  
 Val Leu Gly Asp Trp Val Gln Glu Asn His Val Ile Glu Asn Gly Ala  
     50                    55                    60  
 Thr Leu Arg Pro Trp Gln Asp Pro Leu His Asp Lys Tyr Arg Met Lys  
     65                    70                    75                    80

<210> 1431  
 <211> 26  
 <212> PRT  
 <213> Homo sapiens

<400> 1431  
 Met Leu Arg Trp His Leu Trp Ser Trp Phe Cys Trp Phe Cys Leu Ser  
           1                  5                  10                  15  
 Glu Ala Gly Val Leu Leu Asp Leu Pro Thr  
                   20                  25

<210> 1432  
 <211> 84  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (1)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (25)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (42)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (64)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (79)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1432  
 Xaa Met Ser Arg Gln His Arg Leu Asn Pro His Gly Pro Asp Pro Ala  
           1                  5                  10                  15  
 Ala Pro His Arg Ala Cys Arg Leu Xaa Ser Pro Arg Gln Val Thr Trp  
                   20                  25                  30  
 Leu Thr Pro Ala Glu Ala Leu Pro Leu Xaa Pro Cys Pro Ser Gln Cys  
           35                  40                  45  
 Gly Ala His Cys Arg Gln His Gly Pro Glu Arg Glu Gly Ser Ala Xaa  
           50                  55                  60  
 Pro Ala Ala Leu Leu Arg Pro Gly Leu Pro Val Phe Gly His Xaa Leu  
           65                  70                  75                  80



Arg Leu Ser Gln

<210> 1433  
 <211> 26  
 <212> PRT  
 <213> Homo sapiens

<400> 1433  
 Met Leu Arg Trp His Leu Trp Ser Trp Phe Cys Trp Phe Cys Leu Ser  
           1                          5                          10                          15

Glu Ala Gly Val Leu Leu Asp Leu Pro Thr  
                   20                          25

<210> 1434  
 <211> 139  
 <212> PRT  
 <213> Homo sapiens

<400> 1434  
 Met Ala Leu Arg Met Leu Trp Ala Gly Gln Ala Lys Gly Ile Leu Gly  
           1                          5                          10                          15

Gly Trp Gly Ile Ile Cys Leu Val Met Ser Leu Leu Leu Gln His Pro  
                   20                          25                          30

Gly Val Tyr Ser Lys Cys Tyr Phe Gln Ala Gln Ala Pro Cys His Tyr  
                   35                          40                          45

Glu Gly Lys Tyr Phe Thr Leu Gly Glu Ser Trp Leu Arg Lys Asp Cys  
           50                          55                          60

Phe His Cys Thr Cys Leu His Pro Val Gly Val Gly Cys Cys Asp Thr  
           65                          70                          75                          80

Ser Gln His Pro Ile Asp Phe Pro Ala Gly Cys Glu Val Arg Gln Glu  
                   85                          90                          95

Ala Gly Thr Cys Gln Phe Ser Leu Val Gln Lys Ser Asp Pro Arg Leu  
                   100                          105                          110

Pro Cys Lys Gly Gly Gly Pro Asp Pro Glu Trp Gly Ser Ala Asn Thr  
           115                          120                          125

Pro Val Pro Gly Ala Pro Ala Pro His Ser Ser  
           130                          135

<210> 1435  
 <211> 139  
 <212> PRT  
 <213> Homo sapiens

<400> 1435

Met Ala Leu Arg Met Leu Trp Ala Gly Gln Ala Lys Gly Ile Leu Gly  
 1 5 10 15  
 Gly Trp Gly Ile Ile Cys Leu Val Met Ser Leu Leu Leu Gln His Pro  
 20 25 30  
 Gly Val Tyr Ser Lys Cys Tyr Phe Gln Ala Gln Ala Pro Cys His Tyr  
 35 40 45  
 Glu Gly Lys Tyr Phe Thr Leu Gly Glu Ser Trp Leu Arg Lys Asp Cys  
 50 55 60  
 Phe His Cys Thr Cys Leu His Pro Val Gly Val Gly Cys Cys Asp Thr  
 65 70 75 80  
 Ser Gln His Pro Ile Asp Phe Pro Ala Gly Cys Glu Val Arg Gln Glu  
 85 90 95  
 Ala Gly Thr Cys Gln Phe Ser Leu Val Gln Lys Ser Asp Pro Arg Leu  
 100 105 110  
 Pro Cys Lys Gly Gly Gly Pro Asp Pro Glu Trp Gly Ser Ala Asn Thr  
 115 120 125  
 Pro Val Pro Gly Ala Pro Ala Pro His Ser Ser  
 130 135

<210> 1436  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 1436  
 Met Phe Asp Arg Cys Arg Val Thr Ser Cys Ser Cys Thr Cys Gly Ala  
 1 5 10 15  
 Gly Ala Lys Trp Cys Thr His Val Val Ala Leu Cys Leu Phe Arg Ile  
 20 25 30  
 His Asn Ala Ser Ala Val Cys Leu Arg Ala Pro Val Ser Glu Ser Leu  
 35 40 45  
 Ser Arg Leu Gln Arg Asp Gln Leu Gln Lys Phe Ala Gln Tyr Leu Ile  
 50 55 60  
 Ser Glu Leu Pro Gln Gln Val Gly Glu Val Gly Thr Pro Ser Cys Asn  
 65 70 75 80

<210> 1437  
 <211> 145  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1437

Asp Pro Ser Gly Ser Phe Met Gly Arg Ser Val Met Met Arg Ile Leu  
 1 5 10 15  
 Gly Ser Pro Val Phe Phe Pro Met His Asp Thr Ser Val Cys Leu Thr  
 20 25 30  
 Tyr Pro Asn Phe Tyr Thr Val Val Ser Pro Thr Gly Ser Arg Pro Pro  
 35 40 45  
 Ser Arg Asn Trp Asn Ser Glu Thr Pro Gly Asp Glu Glu Leu Gly Phe  
 50 55 60  
 Glu Ala Ala Val Ala Ala Leu Gly Met Lys Thr Thr Val Ser Glu Ala  
 65 70 75 80  
 Glu His Pro Leu Leu Cys Glu Gly Thr Arg Arg Glu Lys Gly Asp Leu  
 85 90 95  
 Ala Leu Ala Leu Met Ile Thr Tyr Lys Asp Asp Gln Ala Lys Leu Lys  
 100 105 110  
 Lys Lys Ile Ser Arg Ala Trp Trp Arg Ala Pro Val Val Pro Ala Thr  
 115 120 125  
 Arg Glu Ala Glu Val Gly Glu Leu Leu Glu Pro Arg Ser Leu Arg Leu  
 130 135 140  
 Gln  
 145

&lt;210&gt; 1438

&lt;211&gt; 80

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1438

Met Phe Asp Arg Cys Arg Val Thr Ser Cys Ser Cys Thr Cys Gly Ala  
 1 5 10 15  
 Gly Ala Lys Trp Cys Thr His Val Val Ala Leu Cys Leu Phe Arg Ile  
 20 25 30  
 His Asn Ala Ser Ala Val Cys Leu Arg Ala Pro Val Ser Glu Ser Leu  
 35 40 45  
 Ser Arg Leu Gln Arg Asp Gln Leu Gln Lys Phe Ala Gln Tyr Leu Ile  
 50 55 60  
 Ser Glu Leu Pro Gln Gln Val Gly Glu Val Gly Thr Pro Ser Cys Asn  
 65 70 75 80

&lt;210&gt; 1439

<211> 91  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (56)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1439  
 Met Ala Ser Gln Val Pro Ser Ser Pro Phe Gln Ser Phe Phe Val Phe  
 1 5 10 15  
 Val Phe Val Phe Leu Arg Pro Ser His Ser Val Ala Gln Ala Gly Val  
 20 25 30  
 Pro Leu His Phe Tyr Phe Phe Ile Gln Gln Val Leu Ile Lys Cys Ala  
 35 40 45  
 Leu Tyr Gln Val Leu Ser Ser Xaa Leu Gly Tyr Asn Gly Asp Gln Gly  
 50 55 60  
 Asp Cys Arg Phe Trp Gln Gly Lys Leu Thr Ser Asn Thr Ala Thr Arg  
 65 70 75 80  
 His Ser Glu Thr Leu Ser Leu Leu Glu Glu Leu  
 85 90

<210> 1440  
 <211> 137  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (132)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1440  
 Met Ser Ala Lys Gln Val Thr Ser Gln Ser Ser Leu Ser Glu Asn Asp  
 1 5 10 15  
 Gly Phe Gln Ala Phe Val Trp Trp Leu Leu Gly Ile Gly Ala Leu Thr  
 20 25 30  
 Phe Ala Leu Leu Met Ser Ala Arg Met Gly Ile Phe Gln Glu Thr Leu  
 35 40 45  
 Tyr Lys Arg Phe Gly Lys His Ser Lys Glu Ala Leu Phe Tyr Asn His  
 50 55 60  
 Ala Leu Pro Leu Pro Gly Phe Val Phe Leu Ala Ser Asp Ile Tyr Asp  
 65 70 75 80  
 His Ala Val Leu Phe Asn Lys Ser Glu Leu Tyr Glu Ile Pro Val Ile  
 85 90 95  
 Gly Val Thr Leu Pro Ile Met Trp Phe Tyr Leu Leu Met Asn Ile Ile

100 105 110

Thr Gln Tyr Val Cys Ile Arg Gly Val Phe Ile Leu Thr Thr Gly Met  
115 120 125

Arg Leu Pro Xaa Arg His Ala Arg Ser  
130 135

&lt;210&gt; 1441

&lt;211&gt; 94

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (6)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1441

Pro Tyr Pro Phe Cys Xaa Pro Ser Pro Phe Pro Ser Ser Ala Ala Pro  
1 5 10 15

His Ser Gln Ser Asp Ala Ala Gly Thr Thr Ile Thr Arg Ser Gly Gln  
20 25 30

Val Asn Arg Asp Thr Ser Asn Ser Arg Ala Gly Leu Pro Pro Ala Phe  
35 40 45

Trp Glu Gly Lys Arg Cys Ser Pro Glu Leu Ile Pro Ser Asp Ser Ala  
50 55 60

Ala Arg Leu Val Gly Leu Leu Phe Pro Thr Phe Cys Phe Phe Phe Phe  
65 70 75 80

Leu Cys Lys Ser Gln Met Leu Leu Ser Ile Ala Phe Cys Asp  
85 90

&lt;210&gt; 1442

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (104)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1442

Met Gly Phe Ser Gly Pro Ala Leu Leu Phe Pro Ile Phe Leu Leu His  
1 5 10 15

Ser Ala Ser Ser Met Leu Ser His Thr Ser Thr Ile Val Gln Thr Asn  
20 25 30

Lys Gln Thr Glu Glu Arg Lys Asp Gly Glu Phe Cys Asn Arg Ala Ala  
35 40 45

```
Lys Ser Gln Ser Lys Gln Glu Glu Val Glu Gly Thr Lys Thr Asn Lys  
    50      .     .           55              60
```

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```
Gln Arg Cys Leu Asp Tyr Ser Thr Val Asp Met Pro Ser Ile Leu Ala  
    65          70             75              80
```

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```
Cys Ala Pro Leu Ser Ile Thr Gly His Asn Ser Glu Glu Val Gln Ile  
        85              90              95
```

---

```
Lys Trp Cys Leu Phe Val Cys Xaa  
       100
```

```

<210> 1443
<211> 104
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (104)
<223> Xaa equals any of the naturally occurring L-amino acids

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<400> 1443
Met Gly Phe Ser Gly Pro Ala Leu Leu Phe Pro Ile Phe Leu Leu His
  1             5             10             15

Ser Ala Ser Ser Met Leu Ser His Thr Ser Thr Ile Val Gln Thr Asn
      20             25             30

Lys Gln Thr Glu Glu Arg Lys Asp Gly Glu Phe Cys Asn Arg Ala Ala
      35             40             45

Lys Ser Gln Ser Lys Gln Glu Glu Val Glu Gly Thr Lys Thr Asn Lys
      50             55             60

Gln Arg Cys Leu Asp Tyr Ser Thr Val Asp Met Pro Ser Ile Leu Ala
      65             70             75             80

Cys Ala Pro Leu Ser Ile Thr Gly His Asn Ser Glu Glu Val Gln Ile
      85             90             95

Lys Trp Cys Leu Phe Val Cys Xaa
      100

```

```
<210> 1444
<211> 88
<212> PRT
<213> Homo sapiens
```

```

<400> 1444
Met Trp Gly Glu Pro Gly Gly Arg Val Ser Ala Leu Ala Gln Val Ser
  1                    5                    10                    15

Ala Gly Tyr Ala Pro Ser Gly Ser Gln Lys Cys Phe Leu Gln Gly Leu
      20                    25                    30

```

Arg Val Leu Leu Leu Val Val Gln Leu Ser Ala Pro His Leu Cys Pro  
                   35                                  40                                  45

Asn Pro Asn Ser Cys Gln Val Leu Ala Ser Tyr Phe Ser Cys Leu Tyr  
           50                                  55                                  60

Ser Tyr Trp Asp Thr Ile Glu Ser Pro Arg Ala Val Gly Ser His Leu  
       65                                  70                                  75                                  80

Arg Gly Arg Tyr Ile Gly Ser Ser  
                                   85

<210> 1445  
 <211> 64  
 <212> PRT  
 <213> Homo sapiens

<400> 1445  
 Ser Gln Arg Ser Gly Arg Leu Arg Gln Glu Asp His Leu Arg Ser Gly  
       1                                  5                                  10                                  15

Val Gln Cys Gly Gln His Ser Lys Thr Leu Ser Leu Gln Lys Asn Leu  
                   20                                  25                                  30

Lys Leu Ser Trp His Trp Trp Arg Met Ala Val Val Pro Ala Thr Trp  
                   35                                  40                                  45

Glu Val Glu Val Gly Gly Ser Leu Glu Pro Arg Ser Ser Ser Leu Gln  
       50                                  55                                  60

<210> 1446  
 <211> 88  
 <212> PRT  
 <213> Homo sapiens

<400> 1446  
 Met Trp Gly Glu Pro Gly Gly Arg Val Ser Ala Leu Ala Gln Val Ser  
       1                                  5                                  10                                  15

Ala Gly Tyr Ala Pro Ser Gly Ser Gln Lys Cys Phe Leu Gln Gly Leu  
                   20                                  25                                  30

Arg Val Leu Leu Leu Val Val Gln Leu Ser Ala Pro His Leu Cys Pro  
                   35                                  40                                  45

Asn Pro Asn Ser Cys Gln Val Leu Ala Ser Tyr Phe Ser Cys Leu Tyr  
       50                                  55                                  60

Ser Tyr Trp Asp Thr Ile Glu Ser Pro Arg Ala Val Gly Ser His Leu  
       65                                  70                                  75                                  80

Arg Gly Arg Tyr Ile Gly Ser Ser

85

&lt;210&gt; 1447

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (61)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1447

Met	Ala	Ser	His	Ser	Phe	Leu	Leu	Asp	Ile	Tyr	Leu	Val	Leu	Ser	Leu
1				5				10					15		

Trp	Lys	Cys	Ile	Pro	Gly	Leu	Val	Gln	Asp	Val	Phe	Leu	Glu	Met	Lys
			20					25					30		

Val	Leu	Thr	Glu	Ser	Ala	Leu	Cys	Lys	Val	Met	Thr	Leu	Glu	Pro	Leu
		35					40					45			

Gln	His	Ser	Val	Leu	Val	Phe	Arg	Cys	Trp	Gln	Ser	Xaa	Phe	Gln	Ala
	50						55				60				

Lys	Ser	Ser	Arg	Pro	Cys	Gln	Ala	Ser	Ile	Phe	Ala	Tyr	Tyr	Thr	Leu
65					70					75					80

Asn Phe

&lt;210&gt; 1448

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1448

Met	Ala	Ser	His	Ser	Phe	Leu	Leu	Asp	Ile	Tyr	Leu	Val	Leu	Ser	Leu
1				5				10					15		

Trp	Lys	Cys	Ile	Pro	Gly	Leu	Val	Gln	Asp	Val	Phe	Leu	Glu	Met	Lys
			20					25					30		

Val	Leu	Thr	Glu	Ser	Ala	Leu	Cys	Lys	Val	Met	Thr	Leu	Glu	Pro	Leu
		35					40					45			

Gln	His	Ser	Val	Leu	Val	Phe	Arg	Cys	Trp	Gln	Ser	Pro	Phe	Gln	Ala
	50						55				60				

Lys	Ser	Ser	Arg	Pro	Cys	Gln	Ala	Ser	Ile	Phe	Ala	Tyr	Tyr	Thr	Leu
65					70					75					80

Asn Phe



<210> 1449  
 <211> 103  
 <212> PRT  
 <213> Homo sapiens

<400> 1449  
 Met Gln Ser Phe His His Pro Leu Arg Ile Leu Leu Trp Leu Pro Leu  
     1                    5                    10                    15  
 Val Thr Lys Lys Ser Leu Cys Pro Val His Lys Thr Met Thr Gln Leu  
             20                    25                    30  
 Ser Leu Val Leu Ala Ser Leu Ser Asn Ser Leu Ser Phe Gly Tyr Pro  
             35                    40                    45  
 Gly Phe Val Arg Ala Asn Arg Gln Thr Ser Leu Ile Gly Glu Phe Leu  
             50                    55                    60  
 Gly Gly Gly Gly Trp His Ala Phe Ala Tyr Cys Phe Leu Ser Ala Glu  
             65                    70                    75                    80  
 Asn Ala Ser Leu Ser Leu Ala Val Ser Ala Thr Pro Pro Asp Leu Val  
                     85                    90                    95  
 Ser Leu Ile Cys Leu Ser Gln  
                     100

<210> 1450  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (33)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1450  
 Ala Ala Met Arg Trp Arg Trp Trp Gln Arg Leu Leu Pro Trp Arg Leu  
     1                    5                    10                    15  
 Leu Gln Ala Arg Gly Phe Pro Gln Asn Ser Ala Pro Ser Leu Gly Leu  
             20                    25                    30  
 Xaa Ala Arg Thr Tyr Ser Gln Gly Asp Cys Ser Tyr Ser Arg Thr Ala  
             35                    40                    45  
 Leu Leu  
     50

<210> 1451  
 <211> 130  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (31)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (115)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (116)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (122)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (126)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (127)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1451  
 Met Arg Trp Arg Trp Trp Gln Arg Leu Leu Pro Trp Arg Leu Leu Gln  
   1                  5                  10                  15  
  
 Ala Arg Gly Phe Pro Gln Asn Ser Ala Pro Ser Leu Gly Leu Xaa Ala  
           20                  25                  30  
  
 Arg Thr Tyr Ser Gln Gly Asp Cys Ser Tyr Ser Arg Thr Ala Leu Tyr  
       35                  40                  45  
  
 Asp Leu Leu Gly Val Pro Ser Thr Ala Thr Gln Ala Gln Ile Lys Ala  
   50                  55                  60  
  
 Ala Tyr Tyr Arg Gln Cys Phe Leu Tyr His Pro Asp Arg Asn Ser Gly  
   65                  70                  75                  80  
  
 Ser Ala Glu Ala Ala Glu Arg Phe Thr Arg Ile Ser Gln Ala Tyr Val  
           85                  90                  95  
  
 Val Leu Gly Ser Ala Pro Ser Val Ala Ser Met Ile Ala Ala Tyr Ser  
       100                  105                  110  
  
 Ala Thr Xaa Xaa Cys Ala Asp Leu Ala Xaa Gly Leu Gln Xaa Xaa Arg  
   115                  120                  125  
  
 His Pro  
   130

<210> 1452  
 <211> 30  
 <212> PRT  
 <213> Homo sapiens

<400> 1452  
 Leu Asn Pro Trp Pro Leu Ile Val Tyr Leu Cys Trp Asp Pro Lys Glu  
           1                  5                  10                  15  
 Leu Tyr Ser Pro Cys Pro Pro Arg Pro Ala Gln Leu Ser Arg  
                   20                  25                  30

<210> 1453  
 <211> 226  
 <212> PRT  
 <213> Homo sapiens

<400> 1453  
 Met Ala Ala Met Arg Trp Arg Trp Trp Gln Arg Leu Leu Pro Trp Arg  
           1                  5                  10                  15  
 Leu Leu Gln Ala Arg Gly Phe Pro Gln Asn Ser Ala Pro Ser Leu Gly  
                   20                  25                  30  
 Leu Gly Ala Arg Thr Tyr Ser Gln Gly Asp Cys Ser Tyr Ser Arg Thr  
           35                  40                  45  
 Ala Leu Tyr Asp Leu Leu Gly Val Pro Ser Thr Ala Thr Gln Ala Gln  
           50                  55                  60  
 Ile Lys Ala Ala Tyr Tyr Arg Gln Cys Phe Leu Tyr His Pro Asp Arg  
           65                  70                  75                  80  
 Asn Ser Gly Ser Ala Glu Ala Ala Glu Arg Phe Thr Arg Ile Ser Gln  
                   85                  90                  95  
 Ala Tyr Val Val Leu Gly Ser Ala Thr Leu Arg Arg Lys Tyr Asp Arg  
           100                  105                  110  
 Gly Leu Leu Ser Asp Glu Asp Leu Arg Gly Pro Gly Val Arg Pro Ser  
           115                  120                  125  
 Arg Thr Pro Ala Pro Asp Pro Gly Ser Pro Arg Thr Pro Pro Pro Thr  
           130                  135                  140  
 Ser Arg Thr His Asp Gly Ser Arg Ala Ser Pro Gly Ala Asn Arg Thr  
           145                  150                  155                  160  
 Met Phe Asn Phe Asp Ala Phe Tyr Gln Ala His Tyr Gly Glu Gln Leu  
                   165                  170                  175  
 Glu Arg Glu Arg Arg Leu Arg Ala Arg Arg Glu Ala Leu Arg Lys Arg  
           180                  185                  190  
 Gln Glu Tyr Arg Ser Met Lys Gly Leu Arg Trp Glu Asp Thr Arg Asp  
           195                  200                  205  
 Thr Ala Ala Ile Phe Leu Ile Phe Ser Ile Phe Ile Ile Ile Gly Phe

210

215

220

Tyr Ile

225

&lt;210&gt; 1454

&lt;211&gt; 302

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1454

Met Leu Val Thr Asn Arg Pro Gly Val Leu Lys Glu Pro Lys Leu Met  
 1 5 10 15

Gly Ala Ile Ser Phe Phe Ile Phe Phe Thr Leu Leu Val Leu Ala  
 20 25 30

Arg Gln Asn Glu Tyr Tyr Cys Arg Leu Asp Phe Leu Trp Lys Lys Lys  
 35 40 45

Leu Arg Gln Glu Arg Glu Glu Thr Glu Thr Met Glu Asn Leu Thr Arg  
 50 55 60

Leu Leu Leu Glu Asn Val Leu Pro Ala His Val Ala Pro Gln Phe Ile  
 65 70 75 80

Gly Gln Asn Arg Arg Asn Glu Asp Leu Tyr His Gln Ser Tyr Glu Cys  
 85 90 95

Val Cys Val Leu Phe Ala Ser Val Pro Asp Phe Lys Glu Phe Tyr Ser  
 100 105 110

Glu Ser Asn Ile Asn His Glu Gly Leu Glu Cys Leu Arg Leu Leu Asn  
 115 120 125

Glu Ile Ile Ala Asp Phe Asp Glu Leu Leu Ser Lys Pro Lys Phe Ser  
 130 135 140

Gly Val Glu Lys Ile Lys Thr Ile Gly Ser Thr Tyr Met Ala Ala Thr  
 145 150 155 160

Gly Leu Asn Ala Thr Ser Gly Gln Asp Ala Gln Gln Asp Ala Glu Arg  
 165 170 175

Ser Cys Ser His Leu Gly Thr Met Val Glu Phe Ala Val Ala Leu Gly  
 180 185 190

Ser Lys Leu Asp Val Ile Asn Lys His Ser Phe Asn Asn Phe Arg Leu  
 195 200 205

Arg Val Gly Leu Asn His Gly Pro Val Val Ala Gly Val Ile Gly Ala  
 210 215 220

Gln Lys Pro Gln Tyr Asp Ile Trp Gly Asn Thr Val Asn Val Ala Ser  
 225 230 235 240

Arg Met Glu Ser Thr Gly Val Leu Gly Lys Ile Gln Val Thr Glu Glu  
 245 250 255

Thr Ala Trp Ala Leu Gln Ser Leu Gly Tyr Thr Cys Tyr Ser Arg Gly  
260 265 270

Val Ile Lys Val Lys Gly Lys Gly Gln Leu Cys Thr Tyr Phe Leu Asn  
275 280 285

Thr Asp Leu Thr Arg Thr Gly Pro Pro Ser Ala Thr Leu Gly  
290 295 300

<210> 1455

<211> 76

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (11)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1455

Met Gly Pro Phe Phe Pro Tyr Ser Leu Leu Xaa Phe Phe Pro Cys Ser  
1 5 10 15

Phe Ser Ser Pro Ser Phe Ile Phe Leu Leu Leu Ile Leu Lys Thr Gly  
20 25 30

Cys Ser Leu Phe Pro Cys Cys Pro Ile Ser Pro Leu Cys Pro Tyr Phe  
35 40 45

Ser Gln Ser Leu Ser Pro Leu Lys Ser Arg Ala Gly Arg Cys Tyr Trp  
50 55 60

Cys Phe Phe Thr Leu Gly Pro Ser Ser Tyr Leu Leu  
65 70 75

<210> 1456

<211> 61

<212> PRT

<213> Homo sapiens

<400> 1456

Thr Leu Thr Gln His Gln Gly Ala His Leu Gly Pro Phe Leu Asp Met  
1 5 10 15

Ser Phe Leu His Tyr His Ser His Glu Pro Pro Thr Ser Gly Ile Ala  
20 25 30

Asp Gln Gly Trp Gly Glu Asn Val Ala Cys Cys Phe Leu Val Leu Val  
35 40 45

Ile Ile Tyr Leu Asn Lys Gln Cys Cys Lys Tyr Leu Pro  
50 55 60

<210> 1457  
 <211> 110  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (8)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1457  
 Met Arg Leu Ser Cys Pro Arg Xaa Pro Gly Trp Met Gly Pro Phe Phe  
           1                          5                          10                          15  
 Pro Tyr Ser Leu Leu Ser Phe Phe Pro Cys Ser Phe Ser Ser Pro Ser  
                           20                          25                          30  
 Phe Ile Phe Leu Leu Leu Ile Leu Lys Thr Gly Cys Ser Leu Phe Pro  
           35                          40                          45  
 Cys Cys Pro Ile Ser Pro Leu Cys Pro Tyr Phe Ser Gln Ser Leu Ser  
           50                          55                          60  
 Pro Leu Lys Ser Arg Ala Gly Arg Cys Tyr Trp Cys Phe Phe Thr Leu  
           65                          70                          75                          80  
 Gly Pro Ser Ser Ile Phe Val Phe Ser Val Tyr Pro Leu Pro Asp Thr  
                           85                          90                          95  
 Ser Phe Ser Pro Ser Leu Gly Pro Lys Ala Glu Asn Gln Cys  
                           100                          105                          110

<210> 1458  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<400> 1458  
 Met Gly Pro Phe Phe Pro Tyr Ser Leu Leu Ser Phe Phe Pro Cys Ser  
           1                          5                          10                          15  
 Phe Ser Ser Pro Ser Phe Ile Phe Leu Leu Leu Ile Leu Lys Thr Gly  
                           20                          25                          30  
 Cys Ser Leu Phe Pro Cys Cys Pro Ile Ser Pro Leu Cys Pro Tyr Phe  
           35                          40                          45  
 Ser Gln Ser Leu Ser Pro Leu Lys Ser Arg Ala Gly Arg Cys Tyr Trp  
           50                          55                          60  
 Cys Phe Phe Thr Leu Gly Pro Ser Ser Ile Phe Val Phe Ser Val Tyr  
           65                          70                          75                          80  
 Pro Leu Pro Asp Thr Ser Phe Ser Pro Ser Leu Gly Pro Lys Ala Glu  
                           85                          90                          95  
 Asn Gln Cys

<210> 1459  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<400> 1459

```

Met Phe Ile Cys Phe Leu Thr Leu Leu Thr Pro Gly Phe Ser Leu Ser
 1              5              10              15

Leu Arg Arg Lys His Tyr Leu Ile Thr Phe Arg Trp Phe Thr Tyr Ser
      20              25              30

Val Lys Asn Met Cys Lys Tyr Phe Val Gln Ser Pro Val Ser Asn Lys
      35              40              45

Gln Pro Tyr Val Val Thr Asn His Leu Phe Cys His Ser Val Leu Gly
 50              55              60

His Arg Ser Val Gly Met Val Ser Asp Leu Asp Ala Pro Thr Phe His
 65              70              75              80

Val Arg Pro Arg Thr Val Pro Trp Ser Val Asp Ser Trp Ser Ala Leu
      85              90              95

Thr Gly

```

<210> 1460  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<400> 1460

```

Met Phe Ile Cys Phe Leu Thr Leu Leu Thr Pro Gly Phe Ser Leu Ser
 1              5              10              15

Leu Arg Arg Lys His Tyr Leu Ile Thr Phe Arg Trp Phe Thr Tyr Ser
      20              25              30

Val Lys Asn Met Cys Lys Tyr Phe Val Gln Ser Pro Val Ser Asn Lys
      35              40              45

Gln Pro Tyr Val Val Thr Asn His Leu Phe Cys His Ser Val Leu Gly
 50              55              60

His Arg Ser Val Gly Met Val Ser Asp Leu Asp Ala Pro Thr Phe His
 65              70              75              80

Val Arg Pro Arg Thr Val Pro Trp Ser Val Asp Ser Trp Ser Ala Leu
      85              90              95

Thr Gly

```

<210> 1461  
 <211> 33  
 <212> PRT  
 <213> Homo sapiens

<400> 1461  
 Met Leu Val Leu Val Ser Gly Ile Ile Phe Ser Leu Ala Asp Arg Ser  
     1                    5                    10                    15  
 Ser Ser Ser Thr Ile Arg Met Asp Ala Leu Ala Phe Leu Gln Gly Leu  
             20                    25                    30  
 Leu

<210> 1462  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens

<400> 1462  
 Met Leu Val Leu Val Ser Gly Ile Ile Phe Ser Leu Ala Asp Arg Ser  
     1                    5                    10                    15  
 Ser Ser Ser Thr Ile Arg Met Asp Ala Leu Ala Phe Leu Gln Gly Leu  
             20                    25                    30  
 Leu Gly Thr Glu Pro Ala Glu Ala Phe His Pro His Leu Pro Ile Leu  
             35                    40                    45  
 Leu Pro Pro Val Met Ala Cys Val Ala Asp Pro Phe Tyr Lys Ile Ala  
             50                    55                    60  
 Ala Arg Gly Pro Gly Gly Ala Ala Gly Ala Gly Ala Gly Pro Val Ala  
             65                    70                    75                    80  
 Ala Ala Gln Ala Ser Asp Ala Gly Ser  
                     85

<210> 1463  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 1463  
 Met Tyr Phe Ile Phe Thr Ser Phe Trp Ala Tyr Lys Ile Tyr Tyr Val  
     1                    5                    10                    15  
 Tyr Gly Phe Met Met Leu Val Leu Val Ile Leu Cys Ile Val Thr Val  
             20                    25                    30  
 Cys Val Thr Ile Val Cys Thr Tyr Phe Leu Leu Asn Ala Glu Asp Tyr  
             35                    40                    45  
 Arg Trp Gln Trp Thr Ser Phe Leu Ser Ala Ala Ser Thr Ala Ile Tyr



50	55	60
Val Tyr Met Tyr Ser Phe Tyr Tyr Tyr Phe Phe Lys Thr Lys Met Tyr		
65	70	75 80
Gly Leu Phe Gln Thr Ser Phe Tyr Phe Gly Tyr Met Ala Val Phe Ser		
	85	90 95
Thr Ala Leu Gly Ile Met Cys Gly Ala Ile Gly Tyr Met Gly Thr Ser		
	100	105 110
Ala Phe Val Arg Lys Ile Tyr Thr Asn Val Lys Ile Asp		
	115	120 125

&lt;210&gt; 1464

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1464

Met Tyr Phe Ile Phe Thr Ser Phe Trp Ala Tyr Lys Ile Tyr Tyr Val		
1	5	10 15
Tyr Gly Phe Met Met Leu Val Leu Val Ile Leu Cys Ile Val Thr Val		
	20	25 30
Cys Val Thr Ile Val Cys Thr Tyr Phe Leu Leu Asn Ala Glu Asp Tyr		
	35	40 45
Arg Trp Gln Trp Thr Ser Phe Leu Ser Ala Ala Ser Thr Ala Ile Tyr		
	50	55 60
Val Tyr Met Tyr Ser Phe Tyr Tyr Tyr Phe Phe Lys Thr Lys Met Tyr		
65	70	75 80
Gly Leu Phe Gln Thr Ser Phe Tyr Phe Gly Tyr Met Ala Val Phe Ser		
	85	90 95
Thr Ala Leu Gly Ile Met Cys Gly Ala Ile Gly Tyr Met Gly Thr Ser		
	100	105 110
Ala Phe Val Arg Lys Ile Tyr Thr Asn Val Lys Ile Asp		
	115	120 125

&lt;210&gt; 1465

&lt;211&gt; 250

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1465

Met Arg Gly Thr Pro Lys Thr His Leu Leu Ala Phe Ser Leu Leu Cys		
1	5	10 15
Leu Leu Ser Lys Val Arg Thr Gln Leu Cys Pro Thr Pro Cys Thr Cys		
	20	25 30

Pro	Trp	Pro	Pro	Arg	Cys	Pro	Leu	Gly	Val	Pro	Leu	Val	Leu	Asp	
	35					40					45				
Gly	Cys	Gly	Cys	Cys	Arg	Val	Cys	Ala	Arg	Arg	Leu	Gly	Glu	Pro	Cys
	50					55					60				
Asp	Gln	Leu	His	Val	Cys	Asp	Ala	Ser	Gln	Gly	Leu	Val	Cys	Gln	Pro
	65				70					75					80
Gly	Ala	Gly	Pro	Gly	Gly	Arg	Gly	Ala	Leu	Cys	Leu	Leu	Ala	Glu	Asp
				85					90					95	
Asp	Ser	Ser	Cys	Glu	Val	Asn	Gly	Arg	Leu	Tyr	Arg	Glu	Gly	Glu	Thr
			100					105					110		
Phe	Gln	Pro	His	Cys	Ser	Ile	Arg	Cys	Arg	Cys	Glu	Asp	Gly	Gly	Phe
		115					120					125			
Thr	Cys	Val	Pro	Leu	Cys	Ser	Glu	Asp	Val	Arg	Leu	Pro	Ser	Trp	Asp
	130					135					140				
Cys	Pro	His	Pro	Arg	Arg	Val	Glu	Val	Leu	Gly	Lys	Cys	Cys	Pro	Glu
	145				150					155					160
Trp	Val	Cys	Gly	Gln	Gly	Gly	Gly	Leu	Gly	Thr	Gln	Pro	Leu	Pro	Ala
				165					170					175	
Gln	Gly	Pro	Gln	Phe	Ser	Gly	Leu	Val	Ser	Ser	Leu	Pro	Pro	Gly	Val
			180					185					190		
Pro	Cys	Pro	Glu	Trp	Ser	Thr	Ala	Trp	Gly	Pro	Cys	Ser	Thr	Thr	Cys
		195					200					205			
Gly	Leu	Gly	Met	Ala	Thr	Arg	Val	Ser	Asn	Gln	Asn	Arg	Phe	Cys	Arg
	210					215					220				
Leu	Glu	Thr	Gln	Arg	Arg	Leu	Cys	Leu	Ser	Arg	Pro	Cys	Pro	Pro	Ser
	225				230					235					240
Arg	Gly	Arg	Ser	Pro	Gln	Asn	Ser	Ala	Phe						
				245					250						

<210> 1466

<211> 250

<212> PRT

<213> Homo sapiens

<400> 1466

Met Arg Gly Thr Pro Lys Thr His Leu Leu Ala Phe Ser Leu Leu Cys  
1 5 10 15

Leu Leu Ser Lys Val Arg Thr Gln Leu Cys Pro Thr Pro Cys Thr Cys  
20 25 30

Pro Trp Pro Pro Pro Arg Cys Pro Leu Gly Val Pro Leu Val Leu Asp  
35 40 45

Gly Cys Gly Cys Cys Arg Val Cys Ala Arg Arg Leu Gly Glu Pro Cys

50                      55                      60  
 Asp Gln Leu His Val Cys Asp Ala Ser Gln Gly Leu Val Cys Gln Pro  
 65                      70                      75                      80  
 Gly Ala Gly Pro Gly Gly Arg Gly Ala Leu Cys Leu Leu Ala Glu Asp  
                     85                      90                      95  
 Asp Ser Ser Cys Glu Val Asn Gly Arg Leu Tyr Arg Glu Gly Glu Thr  
                     100                      105                      110  
 Phe Gln Pro His Cys Ser Ile Arg Cys Arg Cys Glu Asp Gly Gly Phe  
                     115                      120                      125  
 Thr Cys Val Pro Leu Cys Ser Glu Asp Val Arg Leu Pro Ser Trp Asp  
                     130                      135                      140  
 Cys Pro His Pro Arg Arg Val Glu Val Leu Gly Lys Cys Cys Pro Glu  
 145                      150                      155                      160  
 Trp Val Cys Gly Gln Gly Gly Gly Leu Gly Thr Gln Pro Leu Pro Ala  
                     165                      170                      175  
 Gln Gly Pro Gln Phe Ser Gly Leu Val Ser Ser Leu Pro Pro Gly Val  
                     180                      185                      190  
 Pro Cys Pro Glu Trp Ser Thr Ala Trp Gly Pro Cys Ser Thr Thr Cys  
                     195                      200                      205  
 Gly Leu Gly Met Ala Thr Arg Val Ser Asn Gln Asn Arg Phe Cys Arg  
                     210                      215                      220  
 Leu Glu Thr Gln Arg Arg Leu Cys Leu Ser Arg Pro Cys Pro Pro Ser  
 225                      230                      235                      240  
 Arg Gly Arg Ser Pro Gln Asn Ser Ala Phe  
                     245                      250

&lt;210&gt; 1467

&lt;211&gt; 388

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (277)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1467

Met Met Thr Ile Thr Phe Leu Pro Tyr Thr Phe Ser Leu Met Val Thr  
 1                      5                      10                      15

Phe Pro Asp Val Pro Leu Gly Ile Phe Leu Phe Cys Val Cys Val Ile  
                     20                      25                      30

Ala Ile Gly Val Val Gln Ala Leu Ile Val Gly Tyr Ala Phe His Phe  
                     35                      40                      45

Pro His Leu Leu Ser Pro Gln Ile Gln Arg Ser Ala His Arg Ala Leu  
 50 55 60  
 Tyr Arg Arg His Val Leu Gly Ile Val Leu Gln Gly Pro Ala Leu Cys  
 65 70 75 80  
 Phe Ala Ala Ala Ile Phe Ser Leu Phe Phe Val Pro Leu Ser Tyr Leu  
 85 90 95  
 Leu Met Val Thr Val Ile Leu Leu Pro Tyr Val Ser Lys Val Thr Gly  
 100 105 110  
 Trp Cys Arg Asp Arg Leu Leu Gly His Arg Glu Pro Ser Ala His Pro  
 115 120 125  
 Val Glu Val Phe Ser Phe Asp Leu His Glu Pro Leu Ser Lys Glu Arg  
 130 135 140  
 Val Glu Ala Phe Ser Asp Gly Val Tyr Ala Ile Val Ala Thr Leu Leu  
 145 150 155 160  
 Ile Leu Asp Ile Cys Glu Asp Asn Val Pro Asp Pro Lys Asp Val Lys  
 165 170 175  
 Glu Arg Phe Ser Gly Ser Leu Val Ala Ala Leu Ser Ala Thr Gly Pro  
 180 185 190  
 Arg Phe Leu Ala Tyr Phe Gly Ser Phe Ala Thr Val Gly Leu Leu Trp  
 195 200 205  
 Phe Ala His His Ser Leu Phe Leu His Val Arg Lys Ala Thr Arg Ala  
 210 215 220  
 Met Gly Leu Leu Asn Thr Leu Ser Leu Ala Phe Val Gly Gly Leu Pro  
 225 230 235 240  
 Leu Ala Tyr Gln Gln Thr Ser Ala Phe Ala Arg Gln Pro Arg Asp Glu  
 245 250 255  
 Leu Glu Arg Val Arg Val Ser Cys Thr Ile Ile Phe Leu Ala Ser Ile  
 260 265 270  
 Phe Gln Leu Ala Xaa Trp Thr Thr Ala Leu Leu His Gln Ala Glu Thr  
 275 280 285  
 Leu Gln Pro Ser Val Trp Phe Gly Gly Arg Glu His Val Leu Met Phe  
 290 295 300  
 Ala Lys Leu Ala Leu Tyr Pro Cys Ala Ser Leu Leu Ala Phe Ala Ser  
 305 310 315 320  
 Thr Cys Leu Leu Ser Arg Phe Ser Val Gly Ile Phe His Leu Met Gln  
 325 330 335  
 Ile Ala Val Pro Cys Ala Phe Leu Leu Leu Arg Leu Leu Val Gly Leu  
 340 345 350  
 Ala Leu Ala Thr Leu Arg Val Leu Arg Gly Leu Ala Arg Pro Glu His  
 355 360 365

Pro Pro Pro Ala Pro Thr Gly Gln Asp Asp Pro Gln Ser Gln Leu Leu  
 370 375 380

Pro Ala Pro Cys  
 385

<210> 1468

<211> 388

<212> PRT

<213> Homo sapiens

<400> 1468

Met Met Thr Ile Thr Phe Leu Pro Tyr Thr Phe Ser Leu Met Val Thr  
 1 5 10 15

Phe Pro Asp Val Pro Leu Gly Ile Phe Leu Phe Cys Val Cys Val Ile  
 20 25 30

Ala Ile Gly Val Val Gln Ala Leu Ile Val Gly Tyr Ala Phe His Phe  
 35 40 45

Pro His Leu Leu Ser Pro Gln Ile Gln Arg Ser Ala His Arg Ala Leu  
 50 55 60

Tyr Arg Arg His Val Leu Gly Ile Val Leu Gln Gly Pro Ala Leu Cys  
 65 70 75 80

Phe Ala Ala Ala Ile Phe Ser Leu Phe Phe Val Pro Leu Ser Tyr Leu  
 85 90 95

Leu Met Val Thr Val Ile Leu Leu Pro Tyr Val Ser Lys Val Thr Gly  
 100 105 110

Trp Cys Arg Asp Arg Leu Leu Gly His Arg Glu Pro Ser Ala His Pro  
 115 120 125

Val Glu Val Phe Ser Phe Asp Leu His Glu Pro Leu Ser Lys Glu Arg  
 130 135 140

Val Glu Ala Phe Ser Asp Gly Val Tyr Ala Ile Val Ala Thr Leu Leu  
 145 150 155 160

Ile Leu Asp Ile Cys Glu Asp Asn Val Pro Asp Pro Lys Asp Val Lys  
 165 170 175

Glu Arg Phe Ser Gly Ser Leu Val Ala Ala Leu Ser Ala Thr Gly Pro  
 180 185 190

Arg Phe Leu Ala Tyr Phe Gly Ser Phe Ala Thr Val Gly Leu Leu Trp  
 195 200 205

Phe Ala His His Ser Leu Phe Leu His Val Arg Lys Ala Thr Arg Ala  
 210 215 220

Met Gly Leu Leu Asn Thr Leu Ser Leu Ala Phe Val Gly Gly Leu Pro  
 225 230 235 240

Leu Ala Tyr Gln Gln Thr Ser Ala Phe Ala Arg Gln Pro Arg Asp Glu

[illegible]

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<210> 1469
<211> 262
<212> PRT
<213> Homo sapiens
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<220>
<221> SITE
<222> (231)
<223> Xaa equals any of the naturally occurring L-amino acids
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<400> 1469
Met Ser Pro Pro Pro Leu Leu Gln Pro Leu Leu Leu Leu Leu Pro Leu
  1          5          10          15

Leu Asn Val Glu Pro Ser Gly Ala Thr Leu Ile Arg Ile Pro Leu His
  20          25          30

Arg Val Gln Pro Gly Arg Arg Ile Leu Asn Leu Leu Arg Gly Trp Arg
  35          40          45

Glu Pro Ala Glu Leu Pro Lys Leu Gly Ala Pro Ser Pro Gly Asp Lys
  50          55          60

Pro Ile Phe Val Pro Leu Ser Asn Tyr Arg Asp Val Gln Tyr Phe Gly
  65          70          75          80

Glu Ile Gly Leu Gly Thr Pro Pro Gln Asn Phe Thr Val Ala Phe Asp
  85          90          95

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Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Arg Arg Cys His Phe Phe  
 100 105 110  
 Ser Val Pro Cys Trp Leu His His Arg Phe Asp Pro Lys Ala Ser Ser  
 115 120 125  
 Ser Phe Gln Ala Asn Gly Thr Lys Phe Ala Ile Gln Tyr Gly Thr Gly  
 130 135 140  
 Arg Val Asp Gly Ile Leu Ser Glu Asp Lys Leu Thr Ile Gly Gly Ile  
 145 150 155 160  
 Lys Gly Ala Ser Val Ile Phe Gly Glu Ala Leu Trp Glu Pro Ser Leu  
 165 170 175  
 Val Phe Ala Phe Ala His Phe Asp Gly Ile Leu Gly Leu Gly Phe Pro  
 180 185 190  
 Ile Leu Ser Val Glu Gly Val Arg Pro Pro Met Asp Val Leu Val Glu  
 195 200 205  
 Gln Gly Leu Leu Asp Lys Pro Val Phe Ser Phe Tyr Leu Asn Arg Asp  
 210 215 220  
 Pro Glu Glu Pro Asp Gly Xaa Glu Leu Val Leu Gly Gly Ser Asp Pro  
 225 230 235 240  
 Ala His Tyr Ile Pro Pro Ser Pro Phe Val Pro Val Arg Ser Pro Pro  
 245 250 255  
 Met Ala Asp Pro Gln Gly  
 260

&lt;210&gt; 1470

&lt;211&gt; 145

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1470

Met Ser Pro Pro Pro Leu Leu Gln Pro Leu Leu Leu Leu Leu Pro Leu  
 1 5 10 15  
 Leu Asn Val Glu Pro Ser Gly Ala Thr Leu Ile Arg Ile Pro Leu His  
 20 25 30  
 Arg Val Gln Pro Gly Arg Arg Ile Leu Asn Leu Leu Arg Gly Trp Arg  
 35 40 45  
 Glu Pro Ala Glu Leu Pro Lys Leu Gly Ala Pro Ser Pro Gly Asp Lys  
 50 55 60  
 Pro Ile Phe Val Pro Leu Ser Asn Tyr Arg Asp Val Gln Tyr Phe Gly  
 65 70 75 80  
 Glu Ile Gly Leu Gly Thr Pro Pro Gln Asn Phe Thr Val Ala Phe Asp  
 85 90 95  
 Thr Gly Ser Ser Asn Leu Trp Val Pro Ser Arg Arg Cys His Phe Phe

100                      105                      110  
 Ser Val Pro Cys Trp Leu His His Arg Phe Asp Pro Lys Ala Ser Ser  
           115                      120                      125  
 Ser Phe Arg Pro Met Gly Pro Ser Leu Pro Phe Asn Met Glu Leu Gly  
           130                      135                      140  
 Gly  
 145

<210> 1471  
 <211> 212  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (9)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1471  
 Gly Ser Ala Gly Thr Ala Arg Ile Xaa Gly Ser Thr Thr Arg Pro Asp  
   1                          5                          10                          15  
 Pro Glu Glu Pro Asp Gly Gly Glu Leu Val Leu Gly Gly Ser Asp Pro  
           20                          25                          30  
 Ala His Tyr Ile Pro Pro Leu Thr Phe Val Pro Val Thr Val Pro Ala  
           35                          40                          45  
 Tyr Trp Gln Ile His Met Glu Arg Val Lys Val Gly Pro Gly Leu Thr  
           50                          55                          60  
 Leu Cys Ala Lys Gly Cys Ala Ala Ile Leu Asp Thr Gly Thr Ser Leu  
           65                          70                          75                          80  
 Ile Thr Gly Pro Thr Glu Glu Ile Arg Ala Leu His Ala Ala Ile Gly  
                           85                          90                          95  
 Gly Ile Pro Leu Leu Ala Gly Glu Tyr Ile Ile Leu Cys Ser Glu Ile  
                           100                          105                          110  
 Pro Lys Leu Pro Ala Val Ser Phe Leu Leu Gly Gly Val Trp Phe Asn  
           115                          120                          125  
 Leu Thr Ala His Asp Tyr Val Ile Gln Thr Thr Arg Asn Gly Val Arg  
           130                          135                          140  
 Leu Cys Leu Ser Gly Phe Gln Ala Leu Asp Val Pro Pro Pro Ala Gly  
           145                          150                          155                          160  
 Pro Phe Trp Ile Leu Gly Asp Val Phe Leu Gly Thr Tyr Val Ala Val  
                           165                          170                          175  
 Phe Asp Arg Gly Asp Met Lys Ser Ser Ala Arg Val Gly Leu Ala Arg  
           180                          185                          190



Ala Arg Thr Arg Gly Ala Asp Leu Gly Trp Gly Glu Thr Ala Gln Ala  
 195 200 205

Gln Phe Pro Gly  
 210

<210> 1472

<211> 150

<212> PRT

<213> Homo sapiens

<400> 1472

Met Val Met Ile Leu Phe Val Ala Phe Ile Thr Cys Trp Glu Glu Val  
 1 5 10 15

Thr Thr Leu Val Gln Ala Ile Arg Ile Thr Ser Tyr Met Asn Glu Thr  
 20 25 30

Ile Leu Tyr Phe Pro Phe Ser Ser His Ser Ser Tyr Thr Val Arg Ser  
 35 40 45

Lys Lys Ile Phe Leu Ser Lys Leu Ile Val Cys Phe Leu Ser Thr Trp  
 50 55 60

Leu Pro Phe Val Leu Leu Gln Val Ile Ile Val Leu Leu Lys Val Gln  
 65 70 75 80

Ile Pro Ala Tyr Ile Glu Met Asn Ile Pro Trp Leu Tyr Phe Val Asn  
 85 90 95

Ser Phe Leu Ile Ala Thr Val Tyr Trp Phe Asn Cys His Lys Leu Asn  
 100 105 110

Leu Lys Asp Ile Gly Leu Pro Leu Asp Pro Phe Val Asn Trp Lys Cys  
 115 120 125

Cys Phe Ile Pro Leu Thr Ile Pro Asn Leu Glu Gln Ile Glu Lys Pro  
 130 135 140

Ile Ser Ile Met Ile Cys  
 145 150

<210> 1473

<211> 150

<212> PRT

<213> Homo sapiens

<400> 1473

Met Val Met Ile Leu Phe Val Ala Phe Ile Thr Cys Trp Glu Glu Val  
 1 5 10 15

Thr Thr Leu Val Gln Ala Ile Arg Ile Thr Ser Tyr Met Asn Glu Thr  
 20 25 30

Ile Leu Tyr Phe Pro Phe Ser Ser His Ser Ser Tyr Thr Val Arg Ser  
 35 40 45

Lys Lys Ile Phe Leu Ser Lys Leu Ile Val Cys Phe Leu Ser Thr Trp  
     50                    55                    60  
 Leu Pro Phe Val Leu Leu Gln Val Ile Ile Val Leu Leu Lys Val Gln  
     65                    70                    75                    80  
 Ile Pro Ala Tyr Ile Glu Met Asn Ile Pro Trp Leu Tyr Phe Val Asn  
                     85                    90                    95  
 Ser Phe Leu Ile Ala Thr Val Tyr Trp Phe Asn Cys His Lys Leu Asn  
                     100                    105                    110  
 Leu Lys Asp Ile Gly Leu Pro Leu Asp Pro Phe Val Asn Trp Lys Cys  
                     115                    120                    125  
 Cys Phe Ile Pro Leu Thr Ile Pro Asn Leu Glu Gln Ile Glu Lys Pro  
                     130                    135                    140  
 Ile Ser Ile Met Ile Cys  
     145                    150

<210> 1474  
 <211> 353  
 <212> PRT  
 <213> Homo sapiens

<400> 1474  
 Met Arg Tyr Leu Leu Pro Ser Val Val Leu Leu Gly Thr Ala Pro Thr  
     1                    5                    10                    15  
 Tyr Val Leu Ala Trp Gly Val Trp Arg Leu Leu Ser Ala Phe Leu Pro  
                     20                    25                    30  
 Ala Arg Phe Tyr Gln Ala Leu Asp Asp Arg Leu Tyr Cys Val Tyr Gln  
                     35                    40                    45  
 Ser Met Val Leu Phe Phe Phe Glu Asn Tyr Thr Gly Val Gln Ile Leu  
                     50                    55                    60  
 Leu Tyr Gly Asp Leu Pro Lys Asn Lys Glu Asn Ile Ile Tyr Leu Ala  
                     65                    70                    75                    80  
 Asn His Gln Ser Thr Val Asp Trp Ile Val Ala Asp Ile Leu Ala Ile  
                     85                    90                    95  
 Arg Gln Asn Ala Leu Gly His Val Arg Tyr Val Leu Lys Glu Gly Leu  
                     100                    105                    110  
 Lys Trp Leu Pro Leu Tyr Gly Cys Tyr Phe Ala Gln His Gly Gly Ile  
                     115                    120                    125  
 Tyr Val Lys Arg Ser Ala Lys Phe Asn Glu Lys Glu Met Arg Asn Lys  
                     130                    135                    140  
 Leu Gln Ser Tyr Val Asp Ala Gly Thr Pro Met Tyr Leu Val Ile Phe  
     145                    150                    155                    160

Pro Glu Gly Thr Arg Tyr Asn Pro Glu Gln Thr Lys Val Leu Ser Ala  
 165 170 175  
 Ser Gln Ala Phe Ala Ala Gln Arg Gly Leu Ala Val Leu Lys His Val  
 180 185 190  
 Leu Thr Pro Arg Ile Lys Ala Thr His Val Ala Phe Asp Cys Met Lys  
 195 200 205  
 Asn Tyr Leu Asp Ala Ile Tyr Asp Val Thr Val Val Tyr Glu Gly Lys  
 210 215 220  
 Asp Asp Gly Gly Gln Arg Arg Glu Ser Pro Thr Met Thr Glu Phe Leu  
 225 230 235 240  
 Cys Lys Glu Cys Pro Lys Ile His Ile His Ile Asp Arg Ile Asp Lys  
 245 250 255  
 Lys Asp Val Pro Glu Glu Gln Glu His Met Arg Arg Trp Leu His Glu  
 260 265 270  
 Arg Phe Glu Ile Lys Asp Lys Met Leu Ile Glu Phe Tyr Glu Ser Pro  
 275 280 285  
 Asp Pro Glu Arg Arg Lys Arg Phe Pro Gly Lys Ser Val Asn Ser Lys  
 290 295 300  
 Leu Ser Ile Lys Lys Thr Leu Pro Ser Met Leu Ile Leu Ser Gly Leu  
 305 310 315 320  
 Thr Ala Gly Met Leu Met Thr Asp Ala Gly Arg Lys Leu Tyr Val Asn  
 325 330 335  
 Thr Trp Ile Tyr Gly Thr Leu Leu Gly Cys Leu Trp Val Thr Ile Lys  
 340 345 350  
 Ala

&lt;210&gt; 1475

&lt;211&gt; 353

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1475

Met Arg Tyr Leu Leu Pro Ser Val Val Leu Leu Gly Thr Ala Pro Thr  
 1 5 10 15

Tyr Val Leu Ala Trp Gly Val Trp Arg Leu Leu Ser Ala Phe Leu Pro  
 20 25 30

Ala Arg Phe Tyr Gln Ala Leu Asp Asp Arg Leu Tyr Cys Val Tyr Gln  
 35 40 45

Ser Met Val Leu Phe Phe Phe Glu Asn Tyr Thr Gly Val Gln Ile Leu  
 50 55 60

Leu Tyr Gly Asp Leu Pro Lys Asn Lys Glu Asn Ile Ile Tyr Leu Ala

65		70		75		80
Asn His Gln Ser Thr Val Asp Trp Ile Val Ala Asp Ile Leu Ala Ile						
		85		90		95
Arg Gln Asn Ala Leu Gly His Val Arg Tyr Val Leu Lys Glu Gly Leu						
		100		105		110
Lys Trp Leu Pro Leu Tyr Gly Cys Tyr Phe Ala Gln His Gly Gly Ile						
		115		120		125
Tyr Val Lys Arg Ser Ala Lys Phe Asn Glu Lys Glu Met Arg Asn Lys						
		130		135		140
Leu Gln Ser Tyr Val Asp Ala Gly Thr Pro Met Tyr Leu Val Ile Phe						
		145		150		155
Pro Glu Gly Thr Arg Tyr Asn Pro Glu Gln Thr Lys Val Leu Ser Ala						
		165		170		175
Ser Gln Ala Phe Ala Ala Gln Arg Gly Leu Ala Val Leu Lys His Val						
		180		185		190
Leu Thr Pro Arg Ile Lys Ala Thr His Val Ala Phe Asp Cys Met Lys						
		195		200		205
Asn Tyr Leu Asp Ala Ile Tyr Asp Val Thr Val Val Tyr Glu Gly Lys						
		210		215		220
Asp Asp Gly Gly Gln Arg Arg Glu Ser Pro Thr Met Thr Glu Phe Leu						
		225		230		235
Cys Lys Glu Cys Pro Lys Ile His Ile His Ile Asp Arg Ile Asp Lys						
		245		250		255
Lys Asp Val Pro Glu Glu Gln Glu His Met Arg Arg Trp Leu His Glu						
		260		265		270
Arg Phe Glu Ile Lys Asp Lys Met Leu Ile Glu Phe Tyr Glu Ser Pro						
		275		280		285
Asp Pro Glu Arg Arg Lys Arg Phe Pro Gly Lys Ser Val Asn Ser Lys						
		290		295		300
Leu Ser Ile Lys Lys Thr Leu Pro Ser Met Leu Ile Leu Ser Gly Leu						
		305		310		315
Thr Ala Gly Met Leu Met Thr Asp Ala Gly Arg Lys Leu Tyr Val Asn						
		325		330		335
Thr Trp Ile Tyr Gly Thr Leu Leu Gly Cys Leu Trp Val Thr Ile Lys						
		340		345		350
Ala						

&lt;210&gt; 1476

&lt;211&gt; 80

<212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (11)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1476

Met	Thr	His	Cys	Leu	Leu	His	Gly	Met	Gly	Xaa	Ala	Gly	Ala	Ala	Ser
1				5					10					15	
Leu	Thr	Pro	Lys	Pro	Met	Ser	Leu	Ile	Ser	Ala	Tyr	Cys	Gly	Gly	Leu
			20					25					30		
Trp	Leu	Ala	Ala	Val	Ala	Val	Met	Val	Gln	Met	Ala	Ala	Leu	Cys	Gly
		35					40					45			
Ala	Gln	Asp	Ile	Gln	Asp	Lys	Phe	Ser	Ser	Ile	Leu	Ser	Arg	Gly	Gln
	50					55					60				
Glu	Ala	Tyr	Glu	Arg	Leu	Leu	Trp	Asn	Gly	Glu	Phe	Gly	Glu	Pro	Lys
65					70					75					80

<210> 1477  
 <211> 415  
 <212> PRT  
 <213> Homo sapiens

<400> 1477

Val	Gly	Leu	Val	Ser	Met	Leu	Gly	Ile	Pro	Ile	Pro	Gly	Ala	Glu	Gly
1				5					10					15	
Ala	Pro	Val	Leu	Asn	Ser	Leu	Val	Phe	Leu	Ser	Gly	Gln	Ser	Thr	Pro
			20					25					30		
Thr	Gln	Lys	Gly	Val	Gly	Ile	Ala	Gly	Ala	Val	Cys	Val	Ser	Ser	Lys
		35					40					45			
Leu	Arg	Pro	Arg	Gly	Gln	Cys	Arg	Leu	Glu	Phe	Ser	Leu	Ala	Trp	Asp
	50					55					60				
Met	Pro	Arg	Ile	Met	Phe	Gly	Ala	Lys	Gly	Gln	Val	His	Tyr	Arg	Arg
65					70					75					80
Tyr	Thr	Arg	Phe	Phe	Gly	Gln	Asp	Gly	Asp	Ala	Ala	Pro	Ala	Leu	Ser
			85						90					95	
His	Tyr	Ala	Leu	Cys	Arg	Tyr	Ala	Glu	Trp	Glu	Glu	Arg	Ile	Ser	Ala
		100						105					110		
Trp	Gln	Ser	Pro	Val	Leu	Asp	Asp	Arg	Ser	Leu	Pro	Ala	Trp	Tyr	Lys
		115					120					125			
Ser	Ala	Leu	Phe	Asn	Glu	Leu	Tyr	Phe	Leu	Ala	Asp	Gly	Gly	Thr	Val

130	135	140
Trp Leu Glu Val Leu Glu Asp Ser Leu Pro Glu Glu Leu Gly Arg Asn 145 150 155 160		
Met Cys His Leu Arg Pro Thr Leu Arg Asp Tyr Gly Arg Phe Gly Tyr 165 170 175		
Leu Glu Gly Gln Glu Tyr Arg Met Tyr Asn Thr Tyr Asp Val His Phe 180 185 190		
Tyr Ala Ser Phe Ala Leu Ile Met Leu Trp Pro Lys Leu Glu Leu Ser 195 200 205		
Leu Gln Tyr Asp Met Ala Leu Ala Thr Leu Arg Glu Asp Leu Thr Arg 210 215 220		
Arg Arg Tyr Leu Met Ser Gly Val Met Ala Pro Val Lys Arg Arg Asn 225 230 235 240		
Val Ile Pro His Asp Ile Gly Asp Pro Asp Asp Glu Pro Trp Leu Arg 245 250 255		
Val Asn Ala Tyr Leu Ile His Asp Thr Ala Asp Trp Lys Asp Leu Asn 260 265 270		
Leu Lys Phe Val Leu Gln Val Tyr Arg Asp Tyr Tyr Leu Thr Gly Asp 275 280 285		
Gln Asn Phe Leu Lys Asp Met Trp Pro Val Cys Leu Ala Val Met Glu 290 295 300		
Ser Glu Met Lys Phe Asp Lys Asp His Asp Gly Leu Ile Glu Asn Gly 305 310 315 320		
Gly Tyr Ala Asp Gln Thr Tyr Asp Gly Trp Val Thr Thr Gly Pro Ser 325 330 335		
Ala Tyr Cys Gly Gly Leu Trp Leu Ala Ala Val Ala Val Met Val Gln 340 345 350		
Met Ala Ala Leu Cys Gly Ala Gln Asp Ile Gln Asp Lys Phe Ser Ser 355 360 365		
Ile Leu Ser Arg Gly Gln Glu Ala Tyr Glu Arg Leu Leu Trp Asn Gly 370 375 380		
Arg Tyr Tyr Asn Tyr Asp Ser Ser Ser Arg Pro Gln Ser Arg Ser Val 385 390 395 400		
Met Ser Asp Gln Cys Ala Gly Gln Trp Phe Leu Lys Ala Cys Gly 405 410 415		

&lt;210&gt; 1478

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (75)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1478

Met	Ser	Leu	Gly	Gly	Ser	Gln	Ser	Ser	Leu	Val	Ser	Trp	Arg	Ala	Thr
1				5					10					15	
Gln	Ile	Ala	Cys	Met	Thr	Leu	Ser	Trp	Pro	Leu	Trp	Thr	Cys	Trp	Leu
			20					25					30		
Ala	Ala	Pro	Leu	Ser	Leu	Thr	Lys	Ser	Pro	Trp	Arg	Gln	Trp	Ser	Thr
		35					40					45			
His	Val	Lys	Gly	Phe	Asn	Leu	Ala	Ser	Ser	Gln	Ala	Glu	Val	Gln	Pro
	50					55					60				
Val	Gly	Gln	Thr	Leu	Ala	Ser	Glu	Lys	Lys	Xaa	Leu	Gln	Glu	Val	Leu
65					70					75					80
Ala	Arg	Ala	Ile	Gln	His										
				85											

&lt;210&gt; 1479

&lt;211&gt; 159

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (153)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (158)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1479

Met	His	Arg	Leu	Ile	Phe	Val	Tyr	Thr	Leu	Ile	Cys	Ala	Asn	Phe	Cys
1				5					10					15	
Ser	Cys	Arg	Asp	Thr	Ser	Ala	Thr	Pro	Gln	Ser	Ala	Ser	Ile	Lys	Ala
			20					25					30		
Leu	Arg	Asn	Ala	Asn	Leu	Arg	Arg	Asp	Glu	Ser	Asn	His	Leu	Thr	Asp
		35					40					45			
Leu	Tyr	Arg	Arg	Asp	Glu	Thr	Ile	Gln	Val	Lys	Gly	Asn	Gly	Tyr	Val
	50					55					60				
Gln	Ser	Pro	Arg	Phe	Pro	Asn	Ser	Tyr	Pro	Arg	Asn	Leu	Leu	Leu	Thr
65					70					75					80
Trp	Arg	Leu	His	Ser	Gln	Glu	Asn	Thr	Arg	Ile	Gln	Leu	Val	Val	Asp
				85					90					95	

Asn Gln Phe Gly Leu Glu Glu Ala Glu Asn Asp Ile Cys Arg Tyr Asp  
                   100                                  105                                  110

Phe Val Glu Val Glu Asp Ile Ser Glu Thr Ser Thr Ile Ile Arg Gly  
                   115                                  120                                  125

Arg Trp Cys Gly His Lys Glu Val Pro Pro Arg Ile Lys Ser Arg Thr  
                   130                                  135                                  140

Asn His Ile Lys Ile Thr Phe Lys Xaa Asp Asp Tyr Phe Xaa Ala  
                   145                                  150                                  155

<210> 1480

<211> 89

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (33)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (63)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1480

Leu Ile Ile Lys Lys Gly Lys Ile Trp Phe Pro Glu Lys Arg Pro Ile  
   1                                  5                                  10                                  15

Pro Lys His Phe Phe His Glu Lys His Cys Ile Leu Thr Tyr Val Asp  
                   20                                  25                                  30

Xaa Asn Asn Leu Ser Pro Lys Pro Cys His Asn Asn Ile Ser Ala Leu  
                   35                                  40                                  45

Glu Ile Lys Ser Leu Cys Phe Leu Cys Ile Leu Leu Arg His Xaa Tyr  
                   50                                  55                                  60

Ser Phe Asn Thr Tyr Leu Lys Asn Leu Leu Arg Arg Phe Phe Ile Ile  
                   65                                  70                                  75                                  80

Val Leu Gln Lys Thr Met Tyr Lys Leu  
                                   85

<210> 1481

<211> 370

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (216)

<223> Xaa equals any of the naturally occurring L-amino acids.



&lt;400&gt; 1481

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Met His Arg Leu Ile Phe Val Tyr Thr Leu Ile Cys Ala Asn Phe Cys
 1           5           10           15

Ser Cys Arg Asp Thr Ser Ala Thr Pro Gln Ser Ala Ser Ile Lys Ala
          20           25           30

Leu Arg Asn Ala Asn Leu Arg Arg Asp Glu Ser Asn His Leu Thr Asp
          35           40           45

Leu Tyr Arg Arg Asp Glu Thr Ile Gln Val Lys Gly Asn Gly Tyr Val
          50           55           60

Gln Ser Pro Arg Phe Pro Asn Ser Tyr Pro Arg Asn Leu Leu Leu Thr
          65           70           75           80

Trp Arg Leu His Ser Gln Glu Asn Thr Arg Ile Gln Leu Val Phe Asp
          85           90           95

Asn Gln Phe Gly Leu Glu Glu Ala Glu Asn Asp Ile Cys Arg Tyr Asp
          100          105          110

Phe Val Glu Val Glu Asp Ile Ser Glu Thr Ser Thr Ile Ile Arg Gly
          115          120          125

Arg Trp Cys Gly His Lys Glu Val Pro Pro Arg Ile Lys Ser Arg Thr
          130          135          140

Asn Gln Ile Lys Ile Thr Phe Lys Ser Asp Asp Tyr Phe Val Ala Lys
          145          150          155          160

Pro Gly Phe Lys Ile Tyr Tyr Ser Leu Leu Glu Asp Phe Gln Pro Ala
          165          170          175

Ala Ala Ser Glu Thr Asn Trp Glu Ser Val Thr Ser Ser Ile Ser Gly
          180          185          190

Val Ser Tyr Asn Ser Pro Ser Val Thr Asp Pro Thr Leu Ile Ala Asp
          195          200          205

Ala Leu Asp Lys Lys Ile Ala Xaa Phe Asp Thr Val Glu Asp Leu Leu
          210          215          220

Lys Tyr Phe Asn Pro Glu Ser Trp Gln Glu Asp Leu Glu Asn Met Tyr
          225          230          235          240

Leu Asp Thr Pro Arg Tyr Arg Gly Arg Ser Tyr His Asp Arg Lys Ser
          245          250          255

Lys Val Asp Leu Asp Arg Leu Asn Asp Asp Ala Lys Arg Tyr Ser Cys
          260          265          270

Thr Pro Arg Asn Tyr Ser Val Asn Ile Arg Glu Glu Leu Lys Leu Ala
          275          280          285

Asn Val Val Phe Phe Pro Arg Cys Leu Leu Val Gln Arg Cys Gly Gly
          290          295          300

Asn Cys Gly Cys Gly Thr Val Asn Trp Arg Ser Cys Thr Cys Asn Ser
          305          310          315          320

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[illegible]

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<210> 1482
<211> 370
<212> PRT
<213> Homo sapiens
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<400> .1482																
Met	His	Arg	Leu	Ile	Phe	Val	Tyr	Thr	Leu	Ile	Cys	Ala	Asn	Phe	Cys	
1				5					10					15		
Ser	Cys	Arg	Asp	Thr	Ser	Ala	Thr	Pro	Gln	Ser	Ala	Ser	Ile	Lys	Ala	
			20					25					30			
Leu	Arg	Asn	Ala	Asn	Leu	Arg	Arg	Asp	Glu	Ser	Asn	His	Leu	Thr	Asp	
		35					40					45				
Leu	Tyr	Arg	Arg	Asp	Glu	Thr	Ile	Gln	Val	Lys	Gly	Asn	Gly	Tyr	Val	
	50					55					60					
Gln	Ser	Pro	Arg	Phe	Pro	Asn	Ser	Tyr	Pro	Arg	Asn	Leu	Leu	Leu	Thr	
65					70					75					80	
Trp	Arg	Leu	His	Ser	Gln	Glu	Asn	Thr	Arg	Ile	Gln	Leu	Val	Phe	Asp	
				85					90					95		
Asn	Gln	Phe	Gly	Leu	Glu	Glu	Ala	Glu	Asn	Asp	Ile	Cys	Arg	Tyr	Asp	
			100					105					110			
Phe	Val	Glu	Val	Glu	Asp	Ile	Ser	Glu	Thr	Ser	Thr	Ile	Ile	Arg	Gly	
		115					120					125				
Arg	Trp	Cys	Gly	His	Lys	Glu	Val	Pro	Pro	Arg	Ile	Lys	Ser	Arg	Thr	
	130					135					140					
Asn	Gln	Ile	Lys	Ile	Thr	Phe	Lys	Ser	Asp	Asp	Tyr	Phe	Val	Ala	Lys	
145					150					155					160	
Pro	Gly	Phe	Lys	Ile	Tyr	Tyr	Ser	Leu	Leu	Glu	Asp	Phe	Gln	Pro	Ala	
				165					170					175		
Ala	Ala	Ser	Glu	Thr	Asn	Trp	Glu	Ser	Val	Thr	Ser	Ser	Ile	Ser	Gly	
			180					185					190			
Val	Ser	Tyr	Asn	Ser	Pro	Ser	Val	Thr	Asp	Pro	Thr	Leu	Ile	Ala	Asp	
		195					200					205				

Ala Leu Asp Lys Lys Ile Ala Glu Phe Asp Thr Val Glu Asp Leu Leu  
 210 215 220  
 Lys Tyr Phe Asn Pro Glu Ser Trp Gln Glu Asp Leu Glu Asn Met Tyr  
 225 230 235 240  
 Leu Asp Thr Pro Arg Tyr Arg Gly Arg Ser Tyr His Asp Arg Lys Ser  
 245 250 255  
 Lys Val Asp Leu Asp Arg Leu Asn Asp Asp Ala Lys Arg Tyr Ser Cys  
 260 265 270  
 Thr Pro Arg Asn Tyr Ser Val Asn Ile Arg Glu Glu Leu Lys Leu Ala  
 275 280 285  
 Asn Val Val Phe Phe Pro Arg Cys Leu Leu Val Gln Arg Cys Gly Gly  
 290 295 300  
 Asn Cys Gly Cys Gly Thr Val Asn Trp Arg Ser Cys Thr Cys Asn Ser  
 305 310 315 320  
 Gly Lys Thr Val Lys Lys Tyr His Glu Val Leu Gln Phe Glu Pro Gly  
 325 330 335  
 His Ile Lys Arg Arg Gly Arg Ala Lys Thr Met Ala Leu Val Asp Ile  
 340 345 350  
 Gln Leu Asp His His Glu Arg Cys Asp Cys Ile Cys Ser Ser Arg Pro  
 355 360 365  
 Pro Arg  
 370

&lt;210&gt; 1483

&lt;211&gt; 229

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (206)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1483

Met Tyr Lys Leu Leu Leu Phe Asp Leu Leu Thr Val Leu Ala Val Ala  
 1 5 10 15

Leu Leu Ile Gln Phe Pro Arg Lys Leu Leu Cys Gly Leu Cys Pro Gly  
 20 25 30

Ala Leu Gly Arg Leu Ala Gly Thr Gln Glu Phe Gln Val Pro Asp Glu  
 35 40 45

Val Leu Gly Leu Ile Tyr Ala Gln Thr Val Val Trp Val Gly Ser Phe  
 50 55 60

Phe Cys Pro Leu Leu Pro Leu Leu Asn Thr Val Lys Phe Leu Leu Leu  
 65 70 75 80

Phe Tyr Leu Lys Lys Leu Thr Leu Phe Ser Thr Cys Ser Pro Ala Ala  
                                     85                                    90                                    95  
 Arg Thr Phe Arg Ala Ser Ala Ala Asn Phe Phe Phe Pro Leu Val Leu  
                                     100                                    105                                    110  
 Leu Leu Gly Leu Ala Ile Ser Ser Val Pro Leu Leu Tyr Ser Ile Phe  
                                     115                                    120                                    125  
 Leu Ile Pro Pro Ser Lys Leu Cys Gly Pro Phe Arg Gly Gln Ser Ser  
                                     130                                    135                                    140  
 Ile Trp Ala Gln Ile Pro Glu Ser Ile Ser Ser Leu Pro Glu Thr Thr  
                                     145                                    150                                    155                                    160  
 Gln Asn Phe Leu Phe Phe Leu Gly Thr Gln Ala Phe Ala Val Pro Leu  
                                     165                                    170                                    175  
 Leu Leu Ile Ser Ser Ile Leu Met Ala Tyr Thr Val Ala Leu Ala Asn  
                                     180                                    185                                    190  
 Ser Tyr Gly Arg Leu Ile Ser Glu Leu Lys Arg Gln Arg Xaa Thr Glu  
                                     195                                    200                                    205  
 Ala Gln Asn Lys Val Phe Leu Ala Arg Arg Ala Val Ala Leu Thr Ser  
                                     210                                    215                                    220  
 Thr Lys Pro Ala Leu  
 225

&lt;210&gt; 1484

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (33)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (62)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1484

Phe Leu Gly Thr Gln Ala Phe Ala Val Pro Leu Leu Leu Ile Ser Arg  
   1                                    5                                    10                                    15  
 Ser Gln Thr Phe Gly Tyr Asn Gly Arg Ala Cys Gln Glu Trp Leu Pro  
                                     20                                    25                                    30  
 Xaa Leu Ile Ser Ser Ile Leu Met Ala Tyr Thr Val Ala Leu Ala Asn  
                                     35                                    40                                    45  
 Ser Tyr Gly Arg Leu Ile Ser Glu Leu Lys Arg Gln Arg Xaa Thr Glu  
                                     50                                    55                                    60

Ala Gln Asn Lys Val Phe Leu Ala Arg Arg Ala Val Ala Leu Thr Ser  
 65 70 75 80

Thr Lys Pro Ala Leu  
 85

<210> 1485

<211> 229

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (206)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1485

Met Tyr Lys Leu Leu Leu Phe Asp Leu Leu Thr Val Leu Ala Val Ala  
 1 5 10 15

Leu Leu Ile Gln Phe Pro Arg Lys Leu Leu Cys Gly Leu Cys Pro Gly  
 20 25 30

Ala Leu Gly Arg Leu Ala Gly Thr Gln Glu Phe Gln Val Pro Asp Glu  
 35 40 45

Val Leu Gly Leu Ile Tyr Ala Gln Thr Val Val Trp Val Gly Ser Phe  
 50 55 60

Phe Cys Pro Leu Leu Pro Leu Leu Asn Thr Val Lys Phe Leu Leu Leu  
 65 70 75 80

Phe Tyr Leu Lys Lys Leu Thr Leu Phe Ser Thr Cys Ser Pro Ala Ala  
 85 90 95

Arg Thr Phe Arg Ala Ser Ala Ala Asn Phe Phe Phe Pro Leu Val Leu  
 100 105 110

Leu Leu Gly Leu Ala Ile Ser Ser Val Pro Leu Leu Tyr Ser Ile Phe  
 115 120 125

Leu Ile Pro Pro Ser Lys Leu Cys Gly Pro Phe Arg Gly Gln Ser Ser  
 130 135 140

Ile Trp Ala Gln Ile Pro Glu Ser Ile Ser Ser Leu Pro Glu Thr Thr  
 145 150 155 160

Gln Asn Phe Leu Phe Phe Leu Gly Thr Gln Ala Phe Ala Val Pro Leu  
 165 170 175

Leu Leu Ile Ser Ser Ile Leu Met Ala Tyr Thr Val Ala Leu Ala Asn  
 180 185 190

Ser Tyr Gly Arg Leu Ile Ser Glu Leu Lys Arg Gln Arg Xaa Thr Glu  
 195 200 205

Ala Gln Asn Lys Val Phe Leu Ala Arg Arg Ala Val Ala Leu Thr Ser

210

215

220

Thr Lys Pro Ala Leu  
225

&lt;210&gt; 1486

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1486

Met Ala Thr Phe Ser Leu Cys Tyr Leu Met Ala Phe Pro Leu Cys Ala  
1 5 10 15

Gly Ile Ala Gly Ile Ser Val Cys Val Lys Ile Ser Cys Phe Tyr Lys  
20 25 30

Asp Ile Ser Gln Thr Gly Leu Arg Pro Thr Leu Lys Ala Tyr Leu Asn  
35 40 45

Phe Asn Leu Leu Phe Ser Gly Pro Ile Ser Lys Tyr Ser Leu Ile Leu  
50 55 60

Arg Tyr Trp Tyr Leu Gly Leu Gln His Thr Asn Phe Gly Val Asp Thr  
65 70 75 80

Ile Gln Pro Ile Thr Asn Cys Ala His Glu Met Ile Tyr  
85 90

&lt;210&gt; 1487

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (19)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (25)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (28)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (56)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (70)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1487

Ala Leu Pro Phe Thr Leu Asn Lys Thr Ser Asn Tyr Pro Gln Asp Leu  
 1 5 10 15

Val Leu Xaa Ser Leu Leu Leu Gly Xaa Asn Tyr Xaa Gln Leu Gln Ile  
 20 25 30

Leu Leu Glu Cys Ile Phe Pro Val Pro His Ser Leu Leu Tyr Val Val  
 35 40 45

Leu Pro Asn Ser Ile Asp Leu Xaa Gln Lys Leu Pro Arg Asp Leu Pro  
 50 55 60

His Leu Pro Cys Pro Xaa Phe Leu Trp Pro Arg Pro Gly Ser Pro Pro  
 65 70 75 80

Lys Cys Phe Leu Ser Leu Ser Leu Thr Ala Leu Pro Leu Ser Ser Cys  
 85 90 95

Arg Tyr Thr Leu Pro Pro Ser Pro His Pro Leu Met Pro Ser Pro Leu  
 100 105 110

Leu Pro Ser Trp Val Gln Pro Ser Cys Tyr Leu Ala  
 115 120

&lt;210&gt; 1488

&lt;211&gt; 59

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1488

Met Ala Thr Phe Ser Leu Cys Tyr Leu Met Ala Phe Pro Leu Cys Ala  
 1 5 10 15

Gly Ile Ala Gly Ile Ser Val Cys Val Lys Ile Ser Cys Phe Tyr Lys  
 20 25 30

Asp Ile Ser Gln Thr Gly Leu Arg Pro Thr Leu Lys Ala Tyr Leu Asn  
 35 40 45

Phe Asn Leu Leu Phe Ser Gly Pro Ile Gln Ile  
 50 55

&lt;210&gt; 1489

&lt;211&gt; 314

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1489

Gly Ser Gly Arg Gln Ala Gly Trp Pro Arg Gly Leu Leu Ser Gly Pro  
 1 5 10 15

Ala Pro Ser Glu Arg Ser Ala Val Ala Arg Leu Ala Pro Thr Glu Ser

20					25					30					
Leu	Ala	Arg	Met	Glu	Ala	Val	Val	Asn	Leu	Tyr	Gln	Glu	Val	Met	Lys
	35						40					45			
His	Ala	Asp	Pro	Arg	Ile	Gln	Gly	Tyr	Pro	Leu	Met	Gly	Ser	Pro	Leu
	50					55					60				
Leu	Met	Thr	Ser	Ile	Leu	Leu	Thr	Tyr	Val	Tyr	Phe	Val	Leu	Ser	Leu
	65					70					75				80
Gly	Pro	Arg	Ile	Met	Ala	Asn	Arg	Lys	Pro	Phe	Gln	Leu	Arg	Gly	Phe
				85					90					95	
Met	Ile	Val	Tyr	Asn	Phe	Ser	Leu	Val	Ala	Leu	Ser	Leu	Tyr	Ile	Val
			100					105					110		
Tyr	Glu	Phe	Leu	Met	Ser	Gly	Trp	Leu	Ser	Thr	Tyr	Thr	Trp	Arg	Cys
		115					120						125		
Asp	Pro	Val	Asp	Tyr	Ser	Asn	Ser	Pro	Glu	Ala	Leu	Arg	Met	Val	Arg
		130				135						140			
Val	Ala	Trp	Leu	Phe	Leu	Phe	Ser	Lys	Phe	Ile	Glu	Leu	Met	Asp	Thr
	145					150					155				160
Val	Ile	Phe	Ile	Leu	Arg	Lys	Lys	Asp	Gly	Gln	Val	Thr	Phe	Leu	His
				165					170					175	
Val	Phe	His	His	Ser	Val	Leu	Pro	Trp	Ser	Trp	Trp	Trp	Gly	Val	Lys
			180					185					190		
Ile	Ala	Pro	Gly	Gly	Met	Gly	Ser	Phe	His	Ala	Met	Ile	Asn	Ser	Ser
		195					200					205			
Val	His	Val	Ile	Met	Tyr	Leu	Tyr	Tyr	Gly	Leu	Ser	Ala	Phe	Gly	Pro
		210				215						220			
Val	Ala	Gln	Pro	Tyr	Leu	Trp	Trp	Lys	Lys	His	Met	Thr	Ala	Ile	Gln
	225					230					235				240
Leu	Ile	Gln	Phe	Val	Leu	Val	Ser	Leu	His	Ile	Ser	Gln	Tyr	Tyr	Phe
				245					250					255	
Met	Ser	Ser	Cys	Asn	Tyr	Gln	Tyr	Pro	Val	Ile	Ile	His	Leu	Ile	Trp
			260					265					270		
Met	Tyr	Gly	Thr	Ile	Phe	Phe	Met	Leu	Phe	Ser	Asn	Phe	Trp	Tyr	His
		275					280					285			
Ser	Tyr	Thr	Lys	Gly	Lys	Arg	Leu	Pro	Arg	Ala	Leu	Gln	Gln	Asn	Gly
		290				295						300			
Ala	Pro	Gly	Ile	Ala	Lys	Val	Lys	Ala	Asn						
	305					310									

&lt;210&gt; 1490

&lt;211&gt; 258



&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1490

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Met Lys His Ala Asp Pro Arg Ile Gln Gly Tyr Pro Leu Met Gly Ser
 1           5           10           15

Pro Leu Leu Met Thr Ser Ile Leu Leu Thr Tyr Val Tyr Phe Val Leu
      20           25           30

Ser Leu Gly Pro Arg Ile Met Ala Asn Arg Lys Pro Phe Gln Leu Arg
      35           40           45

Gly Phe Met Ile Val Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr
 50           55           60

Ile Val Tyr Glu Phe Leu Met Ser Gly Trp Leu Ser Thr Tyr Thr Trp
 65           70           75           80

Arg Cys Asp Pro Gln Asp Cys Thr Leu Gly Gln Cys Pro Ser Val Pro
      85           90           95

Ser Pro Pro Thr Pro Val Thr Lys Ala Tyr Val Val Arg Thr Glu Gln
      100          105          110

Gly Thr Gly Pro Pro Leu Pro Thr Ala Ala Leu Gln Gly Pro Arg Leu
      115          120          125

Trp Phe Leu Thr His Phe Pro Arg Ala Ala Pro Gly Met Trp Pro His
      130          135          140

Cys Cys Leu Pro Leu Gln Ser Trp Gly Leu Lys Gly Leu Tyr Ser Tyr
      145          150          155          160

Phe Pro Leu Pro Ala Leu Lys Leu Gly Arg Gly Ala Leu Arg Ala Gly
      165          170          175

Pro Thr Lys Gly Leu Val Ala Phe Phe Leu Thr Gln Lys Arg Ser Ala
      180          185          190

Ile Met Ser Leu Trp Thr Gln Ser His Ser Ser Thr Pro His Thr Glu
      195          200          205

Ala Val Ala Ser Gly Pro Lys Val Arg Val Gly Gly Gly Leu Gly Ile
      210          215          220

Gln Pro Val Glu Ala Ala Tyr Ser Thr Cys Val Leu Ile Lys Ser Asp
      225          230          235          240

Arg Gly Asn Gln Lys Lys Lys Lys Lys Lys Lys Leu Glu Asn Tyr Phe
      245          250          255

Leu Lys

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&lt;210&gt; 1491

&lt;211&gt; 222

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1491

Met Lys His Ala Asp Pro Arg Ile Gln Gly Tyr Pro Leu Met Gly Ser  
 1 5 10 15

Pro Leu Leu Met Thr Ser Ile Leu Leu Thr Tyr Val Tyr Phe Val Leu  
 20 25 30

Ser Leu Gly Pro Arg Ile Met Ala Asn Arg Lys Pro Phe Gln Leu Arg  
 35 40 45

Gly Phe Met Ile Val Tyr Asn Phe Ser Leu Val Ala Leu Ser Leu Tyr  
 50 55 60

Ile Val Tyr Glu Val Ile Phe Ile Leu Arg Lys Lys Asp Gly Gln Val  
 65 70 75 80

Thr Phe Leu His Val Phe His His Ser Val Leu Pro Trp Ser Trp Trp  
 85 90 95

Trp Gly Val Lys Ile Ala Pro Gly Gly Met Gly Ser Phe His Ala Met  
 100 105 110

Ile Asn Ser Ser Val His Val Ile Met Tyr Leu Tyr Tyr Gly Leu Ser  
 115 120 125

Ala Phe Gly Pro Val Ala Gln Pro Tyr Leu Trp Trp Lys Lys His Met  
 130 135 140

Thr Ala Ile Gln Leu Ile Gln Phe Val Leu Val Ser Leu His Ile Ser  
 145 150 155 160

Gln Tyr Tyr Phe Met Ser Ser Cys Asn Tyr Gln Tyr Pro Val Ile Ile  
 165 170 175

His Leu Ile Trp Met Tyr Gly Thr Ile Phe Phe Met Leu Phe Ser Asn  
 180 185 190

Phe Trp Tyr His Ser Tyr Thr Lys Gly Lys Arg Leu Pro Arg Ala Leu  
 195 200 205

Gln Gln Asn Gly Ala Pro Gly Ile Ala Lys Val Lys Ala Asn  
 210 215 220

&lt;210&gt; 1492

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1492

Met Tyr Gly Leu Ser Ile Cys Tyr Leu Lys Cys Leu Gly Pro Glu Val  
 1 5 10 15

Phe Trp Thr Phe Phe Leu Phe Trp Asn Thr Ser Ile Cys Ile Leu Pro  
 20 25 30

Val Glu His Pro Lys Ser Glu Ile Ser Lys Ile Gln Asn Val Pro Val

35                                      40                                      45  
 Ser Leu Asn Ser Ser Val Asp Gly His Leu Ser Tyr Phe Arg Phe Glu  
     50                                      55                                      60  
 Ala Ile Met Arg Glu Ala Ala Val His Val Phe Val Tyr Val Lys Cys  
     65                                      70                                      75                                      80  
 Val Phe Thr Cys Gln Ile Leu Lys Asp Leu Thr Asp Phe  
                                     85                                      90

<210> 1493  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<400> 1493  
 Lys Leu Ser Asn Cys Asn Cys Phe Gln Leu Leu Ser Glu Val Gly Ile  
     1                                      5                                      10                                      15  
 Met Val Asp Leu Ile Ser Ser Val Leu Phe Leu Gln Leu Tyr Tyr Gln  
                                     20                                      25                                      30  
 Val Leu Asn Phe Gly Met Ile Val Ser Ser Ala Leu Met Ile Trp Lys  
                                     35                                      40                                      45  
 Gly Leu Met Val Ile Thr Gly Ser Glu Ser Pro Ile Val Val Val Leu  
     50                                      55                                      60  
 Arg  
     65

<210> 1494  
 <211> 93  
 <212> PRT  
 <213> Homo sapiens

<400> 1494  
 Met Tyr Gly Leu Ser Ile Cys Tyr Leu Lys Cys Leu Gly Pro Glu Val  
     1                                      5                                      10                                      15  
 Phe Trp Thr Phe Phe Leu Phe Trp Asn Thr Ser Ile Cys Ile Leu Pro  
                                     20                                      25                                      30  
 Val Glu His Pro Lys Ser Glu Ile Ser Lys Ile Gln Asn Val Pro Val  
                                     35                                      40                                      45  
 Ser Leu Asn Ser Ser Val Asp Gly His Leu Ser Tyr Phe Arg Phe Glu  
     50                                      55                                      60  
 Ala Ile Met Arg Glu Ala Ala Val His Val Phe Val Tyr Val Lys Cys  
     65                                      70                                      75                                      80  
 Val Phe Thr Cys Gln Ile Leu Lys Asp Leu Thr Asp Phe  
                                     85                                      90

<210> 1495  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<400> 1495  
 Met Gly Lys Pro Ser Leu Leu Phe Phe Gly Leu Met Ala Ser Trp Arg  
   1                  5                  10                  15  
 Thr Arg Ser Gln Ala Arg Arg Thr Trp Ser Thr Ser Ser Arg Met Pro  
           20                  25                  30  
 Gly Arg Asn Val Leu Leu Arg Ser Arg Lys Arg Arg Ser Gln Ile Ser  
           35                  40                  45  
 Ser Ser Ile Ser Trp Ser Ile Ala Leu Gly Pro Val Met Pro Trp Pro  
   50                  55                  60  
 Gly Leu Ile Leu Phe Leu Lys Ile Ser Arg Ser Ser Thr Pro Thr Arg  
   65                  70                  75                  80  
 Leu

<210> 1496  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<400> 1496  
 Met Gly Lys Pro Ser Leu Leu Phe Phe Gly Leu Met Ala Ser Trp Arg  
   1                  5                  10                  15  
 Thr Arg Ser Gln Ala Arg Arg Thr Trp Ser Thr Ser Ser Arg Met Pro  
           20                  25                  30  
 Gly Arg Asn Val Leu Leu Arg Ser Arg Lys Arg Arg Ser Gln Ile Ser  
           35                  40                  45  
 Ser Ser Ile Ser Trp Ser Ile Ala Leu Gly Pro Val Met Pro Trp Pro  
   50                  55                  60  
 Gly Leu Ile Leu Phe Leu Lys Ile Ser Arg Ser Ser Thr Pro Thr Arg  
   65                  70                  75                  80  
 Leu

<210> 1497  
 <211> 47  
 <212> PRT  
 <213> Homo sapiens

<220>

&lt;221&gt; SITE

&lt;222&gt; (47)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1497

Met.	Arg	Leu	Arg	Phe	Trp	Leu	Leu	Ile	Trp	Leu	Leu	Leu	Gly	Phe	Ile
1				5					10					15	

Ser	His	Gln	Pro	Thr	Pro	Val	Ile	Asn	Ser	Leu	Ala	Val	Tyr	Arg	His
			20					25					30		

Arg	Glu	Thr	Asp	Phe	Gly	Val	Arg	Val	Arg	Asp	His	Pro	Trp	Xaa
		35					40					45		

&lt;210&gt; 1498

&lt;211&gt; 394

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (73)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (194)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (200)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (210)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (225)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (237)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (389)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1498

Glu	Val	Ile	Asn	Thr	Leu	Ala	Asp	His	Arg	His	Arg	Gly	Thr	Asp	Phe
1				5					10					15	

Gly Gly Ser Pro Trp Leu Leu Ile Ile Thr Val Phe Leu Arg Ser Tyr  
 20 25 30  
 Lys Phe Ala Ile Ser Leu Cys Thr Ser Tyr Leu Cys Val Ser Phe Leu  
 35 40 45  
 Lys Thr Ile Phe Pro Ser Gln Asn Gly His Asp Gly Ser Thr Asp Val  
 50 55 60  
 Gln Gln Arg Ala Arg Arg Ser Asn Xaa Arg Arg Gln Glu Gly Ile Lys  
 65 70 75 80  
 Ile Val Leu Glu Asp Ile Phe Thr Leu Trp Arg Gln Val Glu Thr Lys  
 85 90 95  
 Val Arg Ala Lys Ile Arg Lys Met Lys Val Thr Thr Lys Val Asn Arg  
 100 105 110  
 His Asp Lys Ile Asn Gly Lys Arg Lys Thr Ala Lys Glu His Leu Arg  
 115 120 125  
 Lys Leu Ser Met Lys Glu Arg Glu His Gly Glu Lys Glu Arg Gln Val  
 130 135 140  
 Ser Glu Ala Glu Glu Asn Gly Lys Leu Asp Met Lys Glu Ile His Thr  
 145 150 155 160  
 Tyr Met Glu Met Phe Gln Arg Ala Gln Ala Leu Arg Arg Arg Ala Glu  
 165 170 175  
 Asp Tyr Tyr Arg Cys Lys Ile Thr Pro Ser Ala Arg Lys Pro Leu Cys  
 180 185 190  
 Asn Xaa Val Arg Met Ala Ala Xaa Glu His Arg His Ser Ser Gly Leu  
 195 200 205  
 Pro Xaa Trp Pro Tyr Leu Thr Ala Glu Thr Leu Lys Asn Arg Met Gly  
 210 215 220  
 Xaa Gln Pro Pro Pro Thr Gln Gln His Ser Ile Xaa Asp Asn Ser  
 225 230 235 240  
 Leu Ser Leu Lys Thr Pro Pro Glu Cys Leu Leu His Pro Leu Pro Pro  
 245 250 255  
 Ser Val Asp Asp Asn Ile Lys Glu Cys Pro Leu Ala Pro Leu Pro Pro  
 260 265 270  
 Ser Val Asp Asp Asn Leu Lys Glu Cys Leu Leu Val Pro Leu Pro Pro  
 275 280 285  
 Ser Pro Leu Pro Pro Ser Val Asp Asp Asn Leu Lys Asp Cys Leu Phe  
 290 295 300  
 Val Pro Leu Pro Pro Ser Pro Leu Pro Pro Ser Val Asp Asp Asn Leu  
 305 310 315 320  
 Lys Thr Pro Pro Leu Ala Thr Gln Glu Ala Glu Ala Glu Lys Pro Pro  
 325 330 335

Lys Pro Lys Arg Trp Arg Val Asp Glu Val Glu Gln Ser Pro Lys Pro  
                   340                  345                  350

Lys Arg Arg Arg Ala Asp Glu Val Glu Gln Ser Pro Lys Pro Lys Arg  
                   355                  360                  365

Gln Arg Glu Ala Glu Ala Gln Gln Leu Pro Lys Pro Lys Arg Arg Arg  
                   370                  375                  380

Leu Ser Lys Leu Xaa Thr Arg His Cys Thr  
                   385                  390

<210> 1499

<211> 212

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (54)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (74)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (81)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (101)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (122)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1499

Met Arg Leu Arg Phe Trp Leu Leu Ile Trp Leu Leu Leu Gly Phe Ile  
   1                  5                  10                  15

Ser His Gln Pro Thr Pro Val Ile Asn Ser Leu Ala Val Tyr Arg His  
                   20                  25                  30

Arg Glu Thr Asp Phe Gly Val Gly Val Arg Asp His Pro Gly Gln His  
                   35                  40                  45

Gly Lys Thr Pro Ser Xaa Gln Lys Leu Asp Asn Leu Ile Ile Ile Ile  
                   50                  55                  60

Ile Gly Phe Leu Arg Arg Tyr Thr Phe Xaa Ile Leu Phe Cys Thr Ser  
                   65                  70                  75                  80

Xaa Leu Cys Val Ser Phe Leu Lys Thr Ile Phe Trp Ser Arg Asn Gly  
                     85                    90                    95  
 His Asp Gly Ser Xaa Asp Val Gln Gln Arg Ala Trp Arg Ser Asn Arg  
                     100                    105                    110  
 Ser Arg Gln Lys Gly Leu Arg Ser Ile Xaa Met His Thr Lys Lys Arg  
                     115                    120                    125  
 Val Ser Ser Phe Arg Gly Asn Lys Ile Gly Leu Lys Asp Val Ile Thr  
                     130                    135                    140  
 Leu Arg Arg His Val Glu Thr Lys Val Arg Ala Lys Ile Arg Lys Arg  
                     145                    150                    155                    160  
 Lys Val Thr Thr Lys Ile Asn Arg His Asn Lys Ile Asn Gly Lys Arg  
                     165                    170                    175  
 Lys Thr Ala Arg Lys Gln Lys Met Phe Gln Arg Ala Gln Glu Leu Arg  
                     180                    185                    190  
 Arg Arg Ala Glu Asp Tyr His Lys Cys Lys Val Arg Ser Phe Leu Pro  
                     195                    200                    205  
 Ala Val Ala Gly  
                     210

&lt;210&gt; 1500

&lt;211&gt; 121

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (110)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (112)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (114)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (116)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1500

Met Ala Thr Leu Val Trp Arg Leu Tyr Leu Leu Gln Pro Glu Leu Val  
           1                    5                    10                    15

Leu Pro Ser Pro Pro Pro Pro Pro Arg Phe Pro Gly Pro Val Gln Thr  
                     20                    25                    30



Pro Lys Ile Pro Gly Pro Ala Arg Gly Pro Arg Thr Gly Phe Gln Pro  
                   35                                  40                                  45

Pro Ala Phe Ser Phe Pro Ser Pro Thr Pro Phe Phe Ser Ala Gly Thr  
           50                                  55                                  60

Pro Val Leu Ser Trp Lys Phe Ala Val Leu Cys Pro Ile Ala Gln Glu  
       65                                  70                                  75                                  80

Leu Leu Pro Ala Glu Lys Gly Ala Arg Asn Lys Cys Ser Gly Leu Ser  
                                   85                                  90                                  95

Arg Ser Tyr Ile Phe Ala Met Leu Pro Glu Met Gly Gly Xaa Asn Xaa  
                   100                                  105                                  110

Leu Xaa Gln Xaa Asn Glu Trp His Gly  
                   115                                  120

<210> 1501  
 <211> 128  
 <212> PRT  
 <213> Homo sapiens

<400> 1501  
 Met Asp Arg Leu Lys Ser His Leu Thr Val Cys Phe Leu Pro Ser Val  
       1                                  5                                  10                                  15

Pro Phe Leu Ile Leu Val Ser Thr Leu Ala Thr Ala Lys Ser Val Thr  
           20                                  25                                  30

Asn Ser Thr Leu Asn Gly Thr Asn Val Val Leu Gly Ser Val Pro Val  
           35                                  40                                  45

Ile Ile Ala Arg Thr Asp His Ile Ile Val Lys Glu Gly Asn Ser Ala  
       50                                  55                                  60

Leu Ile Asn Cys Ser Val Tyr Gly Ile Pro Asp Pro Gln Phe Lys Trp  
       65                                  70                                  75                                  80

Tyr Asn Ser Ile Gly Lys Leu Leu Lys Glu Glu Glu Asp Glu Lys Glu  
                                   85                                  90                                  95

Arg Gly Gly Gly Lys Trp Gln Met His Asp Ser Gly Leu Leu Asn Ile  
           100                                  105                                  110

Thr Lys Val Ser Phe Ser Asp Arg Gly Lys Tyr Thr Val Cys Gly Phe  
           115                                  120                                  125

<210> 1502  
 <211> 120  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (5)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (7)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (8)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (14)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (40)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1502  
 Leu Glu Phe Lys Xaa Pro Xaa Xaa Gln Val Pro Pro Trp Xaa Trp Leu  
   1                  5                  10                  15  
 Ser Leu Phe Lys Lys Tyr Arg Ser Ala Thr Ile Ala Asn Ala Arg Thr  
           20                  25                  30  
 Trp Val Phe Cys Ser Phe Phe Xaa Val Leu Ile Leu Leu Phe Leu Tyr  
           35                  40                  45  
 Asn Gly Val Ile Val Ile Asn Thr Asn Cys Ser Phe Trp Phe Ser Pro  
   50                  55                  60  
 His Cys His Phe Cys Pro Tyr Val Ser Leu Glu His Val Pro Gln Arg  
   65                  70                  75                  80  
 Leu Trp Tyr Gln Ser Pro Val Pro Gly Leu Ile Ser Thr Ser His Ile  
                   85                  90                  95  
 Thr Phe Val Met Phe Gln Ser Ser Tyr Glu Ala Cys Tyr Phe Phe Phe  
           100                  105                  110  
 Ile Pro Gln Ala Tyr Phe His Arg  
   115                  120  
  
 <210> 1503  
 <211> 409  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 1503  
 Met Asp Arg Leu Lys Ser His Leu Thr Val Cys Phe Leu Pro Ser Val

1	5	10	15
Pro Phe Leu Ile Leu Val Ser Thr Leu Ala Thr Ala Lys Ser Val Thr	20	25	30
Asn Ser Thr Leu Asn Gly Thr Asn Val Val Leu Gly Ser Val Pro Val	35	40	45
Ile Ile Ala Arg Thr Asp His Ile Ile Val Lys Glu Gly Asn Ser Ala	50	55	60
Leu Ile Asn Cys Ser Val Tyr Gly Ile Pro Asp Pro Gln Phe Lys Trp	65	70	75
Tyr Asn Ser Ile Gly Lys Leu Leu Lys Glu Glu Glu Asp Glu Lys Glu	85	90	95
Arg Gly Gly Gly Lys Trp Gln Met His Asp Ser Gly Leu Leu Asn Ile	100	105	110
Thr Lys Val Ser Phe Ser Asp Arg Gly Lys Tyr Thr Cys Val Ala Ser	115	120	125
Asn Ile Tyr Gly Thr Val Asn Asn Thr Val Thr Leu Arg Val Ile Phe	130	135	140
Thr Ser Gly Asp Met Gly Val Tyr Tyr Met Val Val Cys Leu Val Ala	145	150	155
Phe Thr Ile Val Met Val Leu Asn Ile Thr Arg Leu Cys Met Met Ser	165	170	175
Ser His Leu Lys Lys Thr Glu Lys Ala Ile Asn Glu Phe Phe Arg Thr	180	185	190
Glu Gly Ala Glu Lys Leu Gln Lys Ala Phe Glu Ile Ala Lys Arg Ile	195	200	205
Pro Ile Ile Thr Ser Ala Lys Thr Leu Glu Leu Ala Lys Val Thr Gln	210	215	220
Phe Lys Thr Met Glu Phe Ala Arg Tyr Ile Glu Glu Leu Ala Arg Ser	225	230	235
Val Pro Leu Pro Pro Leu Ile Met Asn Cys Arg Thr Ile Met Glu Glu	245	250	255
Ile Met Glu Val Val Gly Leu Glu Glu Gln Gly Gln Asn Phe Val Arg	260	265	270
His Thr Pro Glu Gly Gln Glu Ala Ala Asp Arg Asp Glu Val Tyr Thr	275	280	285
Ile Pro Asn Ser Leu Lys Arg Ser Asp Ser Pro Ala Ala Asp Ser Asp	290	295	300
Ala Ser Ser Leu His Glu Gln Pro Gln Gln Ile Ala Ile Lys Val Ser	305	310	315
Val His Pro Gln Ser Lys Lys Glu His Ala Asp Asp Gln Glu Gly Gly			

[illegible]

<210> 1504

<211> 107.

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (63)

<223> Xaa equals any of the naturally occurring L-amino acids

$\langle 220 \rangle$

<221> SITE

<222> (64)

<223> Xaa equals any of the naturally occurring L-amino acids

$\langle 220 \rangle$

<221> SITE

<222> (82)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1504

Ser Met Lys Ala Lys Arg Asn Lys Gly Arg Trp Val Ala Ala Gly Pro  
1 5 10 15

Thr Ala Ala Thr Ala Trp Ile Val Leu Thr Val Gln Ala Ala Cys Pro  
20 25 30

Glu Gly Lys Cys Pro Leu Pro Gly Val Cys Ala Pro Ile Thr Trp Ala  
35 40 45

Pro Ser Tyr Leu Thr Ala Gly Lys Ala Lys Leu Ala Gly Pro Xaa Xaa  
50 55 60

Tyr Lys Pro Gly Pro Val Leu Lys Ala Ala His Leu Pro Met Gly Gln  
65 70 75 80

His Xaa His Thr Thr Pro Trp Trp Gln Pro Leu Phe Ile Ile Ser Val  
85 90 95

Ser Arg Tyr Pro Pro Arg Thr Pro Lys Gln His  
100 105

&lt;210&gt; 1505

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1505

Met	Lys	Ala	Lys	Arg	Asn	Lys	Gly	Arg	Trp	Val	Ala	Ala	Gly	Pro	Thr
1				5					10					15	

Ala	Ala	Thr	Ala	Trp	Ile	Val	Leu	Thr	Val	Gln	Ala	Ala	Cys	Pro	Glu
			20					25					30		

Gly	Lys	Cys	Pro	Leu	Pro	Gly	Val	Cys	Ala	Pro	Ile	Thr	Trp	Ala	Pro
		35					40					45			

Ser	Tyr	Leu	Thr	Ala	Gly	Lys	Ala	Lys	Leu	Ala	Gly	Pro	Arg	Thr	Tyr
	50					55					60				

Lys	Pro	Gly	Pro	Val	Leu	Lys	Ala	Ala	His	Leu	Pro	Met	Gly	Gln	His
65					70					75					80

Pro	His	Thr	Thr	Pro	Trp	Trp	Gln	Pro	Leu	Phe	Ile	Ile	Ser	Val	Ser
				85					90					95	

Arg	Tyr	Pro	Pro	Arg	Thr	Pro	Lys	Gln	His
			100					105	

&lt;210&gt; 1506

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1506

Met	Lys	Ala	Lys	Arg	Asn	Lys	Gly	Arg	Trp	Val	Ala	Ala	Gly	Pro	Thr
1				5					10					15	

Ala	Ala	Thr	Ala	Trp	Ile	Val	Leu	Thr	Val	Gln	Ala	Ala	Cys	Pro	Glu
			20					25					30		

Gly	Lys	Cys	Pro	Leu	Pro	Gly	Val	Cys	Ala	Pro	Ile	Thr	Trp	Ala	Pro
		35					40					45			

Ser	Tyr	Leu	Thr	Ala	Gly	Lys	Ala	Lys	Leu	Ala	Gly	Pro	Arg	Thr	Tyr
	50					55					60				

Lys	Pro	Gly	Pro	Val	Leu	Lys	Ala	Ala	His	Leu	Pro	Met	Gly	Gln	His
65					70					75					80

Pro	His	Thr	Thr	Pro	Trp	Trp	Gln	Pro	Leu	Phe	Ile	Ile	Ser	Val	Ser
				85					90					95	

Arg	Tyr	Pro	Pro	Arg	Thr	Pro	Lys	Gln	His
			100					105	

&lt;210&gt; 1507

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1507

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Met Val Ser Cys Trp Asp Gln Asn Leu Ile Leu Phe Leu Thr Cys Leu
 1              5              10              15

Leu Ala Val Leu Ile Phe Cys Leu Val Leu Ala Val Tyr Ile Val Phe
      20              25              30

Phe Lys Phe Leu Lys Ala Ser Leu Ile Tyr Val Pro Arg Glu Trp Val
      35              40              45

Thr Leu Thr Lys Ala Asn Asp Val Gln Lys Gly His Asp Leu Gly Leu
      50              55              60

Ser Tyr Cys Arg Thr Gln Ser Thr Ala Trp Pro Pro Pro Cys Leu Gly
      65              70              75              80

His His Leu His Leu Glu Ser Ser Leu Thr Leu Glu Ser Phe Gly Leu
      85              90              95

Leu Thr Ile Pro Ile Ser Asp Ser Val Ser Leu Ile Thr
      100              105

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&lt;210&gt; 1508

&lt;211&gt; 71

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (32)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1508

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Gly Val Arg Ile Asp Ala Ser Gly Ser Leu Ala Ala Val Leu Pro Leu
 1              5              10              15

Asn His Tyr Thr Ile Thr Glu Phe Asn Phe Leu Gln Phe Gln Gly Xaa
      20              25              30

Thr Glu Leu Ser Ser Asp Ser Lys Ile Arg Ile Ser Asn Arg Glu Trp
      35              40              45

Ile His Leu Arg Ile Gly Glu Thr Asp Ile His Asp Leu Lys Gln Lys
      50              55              60

Ser Glu Thr Lys Leu Ile Asn
      65              70

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&lt;210&gt; 1509

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1509

Met Val Ser Cys Trp Asp Gln Asn Leu Ile Leu Phe Leu Thr Cys Leu  
 1 5 10 15

Leu Ala Val Leu Ile Phe Cys Leu Val Leu Ala Val Tyr Ile Val Phe  
 20 25 30

Phe Lys Phe Leu Lys Ala Ser Leu Ile Tyr Val Pro Arg Glu Trp Val  
 35 40 45

Thr Leu Thr Lys Ala Asn Asp Val Gln Lys Gly His Asp Leu Gly Leu  
 50 55 60

Ser Tyr Cys Arg Thr Gln Ser Thr Ala Trp Pro Pro Pro Cys Leu Gly  
 65 70 75 80

His His Leu His Leu Glu Ser Ser Leu Thr Leu Glu Ser Phe Gly Leu  
 85 90 95

Leu Thr Ile Pro Ile Ser Asp Ser Val Ser Leu Ile Thr  
 100 105

&lt;210&gt; 1510

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1510

Met Gly Leu Gln Ser Arg Leu Ser Gln Pro Cys His Cys Arg His Leu  
 1 5 10 15

Gly Leu Gly Asn Ser Val Val Gly Thr Val Leu Phe Leu Val Gly Cys  
 20 25 30

Leu Val Ala Ser Leu Pro Pro Pro Thr Arg Cys Gln Gly His Cys Ser  
 35 40 45

Pro Gln Pro Pro Ala Pro Val Val Thr Ile Val Ser Lys His Cys Gln  
 50 55 60

Met Val Gln Gly Lys Gly Lys Ile Ala Pro Val Glu Lys Ser Thr Ala  
 65 70 75 80

Val Lys

&lt;210&gt; 1511

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1511

Met Gly Leu Gln Ser Arg Leu Ser Gln Pro Cys His Cys Arg His Leu

[illegible]

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<210> 1512
<211> 115
<212> PRT
<213> Homo sapiens
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<400> 1512
Met Lys Arg Gln Arg Leu Pro Leu Ala Leu Gln Asn Leu Phe Leu Tyr
  1              5              10              15

Thr Phe Gly Val Leu Leu Asn Leu Gly Leu His Ala Gly Gly Gly Ser
      20              25              30

Gly Pro Gly Leu Leu Glu Gly Phe Ser Gly Trp Ala Ala Leu Val Val
      35              40              45

Leu Ser Gln Ala Leu Asn Gly Leu Leu Met Ser Ala Val Met Lys His
  50              55              60

Gly Ser Ser Ile Thr Arg Leu Phe Val Val Ser Cys Ser Leu Val Val
  65              70              75              80

Asn Ala Val Leu Ser Ala Val Leu Leu Arg Leu Gln Leu Thr Ala Ala
      85              90              95

Phe Phe Leu Ala Thr Leu Leu Ile Gly Leu Ala Met Arg Leu Tyr Tyr
      100              105              110

Gly Ser Arg
      115

```

```
<210> 1513
<211> 115
<212> PRT
<213> Homo sapiens
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```
<400> 1513
Met Lys Arg Gln Arg Leu Pro Leu Ala Leu Gln Asn Leu Phe Leu Tyr
  1             5             10             15
```



Thr Phe Gly Val Leu Leu Asn Leu Gly Leu His Ala Gly Gly Gly Ser  
                   20                  25                  30  
 Gly Pro Gly Leu Leu Glu Gly Phe Ser Gly Trp Ala Ala Leu Val Val  
                   35                  40                  45  
 Leu Ser Gln Ala Leu Asn Gly Leu Leu Met Ser Ala Val Met Lys His  
                   50                  55                  60  
 Gly Ser Ser Ile Thr Arg Leu Phe Val Val Ser Cys Ser Leu Val Val  
                   65                  70                  75                  80  
 Asn Ala Val Leu Ser Ala Val Leu Leu Arg Leu Gln Leu Thr Ala Ala  
                   85                  90                  95  
 Phe Phe Leu Ala Thr Leu Leu Ile Gly Leu Ala Met Arg Leu Tyr Tyr  
                   100                  105                  110  
 Gly Ser Arg  
                   115

<210> 1514  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 1514  
 Met Leu Thr Gly Val Ile Ser Gly Ser Thr Gly Ala Met Ala Leu Ser  
   1                  5                  10                  15  
 Leu Ala Ser Leu Ser Ala His Cys Phe Ala Phe Arg Cys Leu Ala Ala  
                   20                  25                  30  
 Pro Phe Tyr Phe Phe Ala Gly Leu Gly Lys His Gly Arg Arg Ile Leu  
                   35                  40                  45  
 Ile Ser Phe Leu Phe Ser Ala Trp  
                   50                  55

<210> 1515  
 <211> 56  
 <212> PRT  
 <213> Homo sapiens

<400> 1515  
 Met Leu Thr Gly Val Ile Ser Gly Ser Thr Gly Ala Met Ala Leu Ser  
   1                  5                  10                  15  
 Leu Ala Ser Leu Ser Ala His Cys Phe Ala Phe Arg Cys Leu Ala Ala  
                   20                  25                  30  
 Pro Phe Tyr Phe Phe Ala Gly Leu Gly Lys His Gly Arg Arg Ile Leu  
                   35                  40                  45  
 Ile Ser Phe Leu Phe Ser Ala Trp  
                   50                  55

&lt;210&gt; 1516

&lt;211&gt; 147

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1516

Met Ala Arg Leu Lys Thr Val Leu Lys Tyr Val Leu Phe Leu Leu Gly  
 1 5 10 15

Thr Leu Val Ile Ala Met Ser Leu Gln Leu Asp Arg Arg Gly Met Trp  
 20 25 30

Asn Met Leu Gly Pro Cys Leu Phe Ala Phe Val Ile Met Ala Ser Met  
 35 40 45

Trp Ala Tyr Arg Cys Gly His Arg Arg Gln Cys Tyr Pro Thr Ser Trp  
 50 55 60

Gln Arg Trp Ala Phe Tyr Leu Leu Pro Gly Val Ser Met Ala Ser Val  
 65 70 75 80

Gly Ile Ala Ile Tyr Thr Ser Met Met Thr Ser Asp Asn Tyr Tyr Tyr  
 85 90 95

Thr His Ser Ile Trp His Ile Leu Leu Ala Gly Ser Ala Ala Leu Leu  
 100 105 110

Leu Pro Pro Pro Asp Gln Pro Ala Glu Pro Trp Ala Cys Ser Gln Lys  
 115 120 125

Phe Pro Cys His Tyr Gln Ile Cys Lys Asn Asp Arg Glu Glu Leu Tyr  
 130 135 140

Ala Val Thr  
 145

&lt;210&gt; 1517

&lt;211&gt; 147

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1517

Met Ala Arg Leu Lys Thr Val Leu Lys Tyr Val Leu Phe Leu Leu Gly  
 1 5 10 15

Thr Leu Val Ile Ala Met Ser Leu Gln Leu Asp Arg Arg Gly Met Trp  
 20 25 30

Asn Met Leu Gly Pro Cys Leu Phe Ala Phe Val Ile Met Ala Ser Met  
 35 40 45

Trp Ala Tyr Arg Cys Gly His Arg Arg Gln Cys Tyr Pro Thr Ser Trp  
 50 55 60

Gln Arg Trp Ala Phe Tyr Leu Leu Pro Gly Val Ser Met Ala Ser Val

[illegible]

```
<210> 1518
<211> 92
<212> PRT
<213> Homo sapiens
```

```
<220>  
<221> SITE  
<222> (70)  
<223> Xaa equals any of the naturally occurring L-amino acids
```

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<400> 1518
Met Trp Gln Tyr His Arg Leu Ser Cys Thr Ala Trp Gln Pro Val Ile
  1                               10                      15

Leu Ser Phe Ser Leu Ser Val Gly His Arg Ile Leu Leu Ala Leu Phe
      20                               25                      30

Phe Phe Ile Leu His Leu Ser Ile Leu Ile Ala Thr Glu Cys Arg Pro
      35                               40                      45

Trp Tyr Ser Phe His Leu Val Ser Leu Pro Ser Phe Leu Pro Gln Phe
      50                               55                      60

Leu Leu Cys Leu Ala Xaa Ile Cys Leu Phe Gly Phe Thr Thr Leu Leu
  65                               70                      80

Phe Ser Phe Cys Cys Gln Val His Val Leu Gly His
      85                               90

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```
<210> 1519
<211> 58
<212> PRT
<213> Homo sapiens
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```
<220>
<221> SITE
<222> (38)
<223> Xaa equals any of the naturally occurring L-amino acids.
```

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (58)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1519

Asp Tyr Ile Leu Met Arg Gln Leu Arg Pro Ala Asn Phe Cys Ile Phe  
 1 5 10 15

Ser Arg Asp Arg Phe His Pro Val Ser Gln Ala Gly Leu Glu Leu Leu  
 20 25 30

Thr Ser Ser Asp Leu Xaa Ala Phe Gly Leu Pro Lys Tyr Trp Tyr Tyr  
 35 40 45

Arg His Glu Pro Pro Cys Leu Ala Ser Xaa  
 50 55

&lt;210&gt; 1520

&lt;211&gt; 80

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (25)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (80)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1520

Met Ala Ser Trp Pro Phe Leu Ser Pro Met Gly Pro Ile Ala Leu Ala  
 1 5 10 15

Leu Leu Thr Gln Ala Leu Ser Ser Xaa Val Gly Leu Cys Leu Ala Leu  
 20 25 30

Thr Cys Ser Arg Arg Pro Ser Pro Asp Ser Val Cys Ala Ser Cys Arg  
 35 40 45

Phe Pro Leu Val Pro Leu Cys Cys Gln Pro Ser Leu Pro Ala Leu Leu  
 50 55 60

Arg Pro Val Ser His Cys Arg Tyr Pro Gly Thr Ser Trp Val Ser Xaa  
 65 70 75 80

&lt;210&gt; 1521

&lt;211&gt; 56

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

<220>  
 <221> SITE  
 <222> (46)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1521  
 Val Asp Leu Val Ser Val Asn Val Gly Ser Glu Phe Leu Val Thr Leu  
   1                  5                  10                  15  
  
 Leu Phe Phe Leu Gly Pro Val Thr Gly His Leu Asp Arg Leu Asn Ala  
           20                  25                  30  
  
 Ile Leu Glu Leu Asp Ser Tyr Val Phe Ile Cys Thr Pro Xaa Ser His  
       35                  40                  45  
  
 Leu Pro Val Ala Ser Ser Asp Ala  
       50                  55

<210> 1522  
 <211> 151  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (54)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (92)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (95)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (117)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (122)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (128)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (132)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (139)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1522

Met	Pro	Leu	Phe	Phe	Thr	Arg	Phe	His	Pro	Ala	Leu	Gly	Pro	Leu	Ala
1				5					10					15	
Leu	Ser	Leu	Leu	Ala	Gly	Phe	Ala	Ala	Gly	Ser	Leu	Gln	Ala	Ile	Gly
			20					25					30		
Arg	Thr	Glu	Glu	Lys	Gly	Val	Arg	Val	Leu	Thr	Ser	Gln	Ala	Pro	Pro
		35					40					45			
Tyr	Arg	Val	Met	Gly	Xaa	Leu	His	Ser	Ser	Thr	Lys	Gly	Phe	Ser	Phe
	50					55					60				
Cys	Gln	Gly	Val	Cys	Pro	Arg	Ala	Leu	Ser	Leu	Trp	Val	Thr	Thr	Pro
65					70					75					80
Leu	Phe	Leu	Pro	Pro	Ser	Pro	Arg	Leu	Ala	Met	Xaa	Pro	Thr	Xaa	Ser
				85					90					95	
Cys	Pro	Gly	Tyr	Cys	His	His	Val	Ser	Leu	Tyr	Pro	Val	Tyr	Ala	Leu
		100						105					110		
Gln	Leu	Val	Leu	Xaa	Gln	Ile	Leu	Leu	Xaa	Trp	Pro	Asn	Leu	Met	Xaa
		115					120					125			
Tyr	Trp	Tyr	Xaa	His	Leu	Met	Thr	Gly	Pro	Xaa	Ser	Asp	Gln	Lys	Arg
	130					135					140				
Lys	Ser	Val	Val	Thr	Leu	Val									
145					150										

&lt;210&gt; 1523

&lt;211&gt; 79

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (57)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1523

Arg	Val	Asp	Asn	Phe	Leu	Cys	Gln	Phe	Ile	Arg	Ile	Tyr	Leu	Ile	Leu
1				5					10					15	
Leu	Ser	Ser	His	Ile	Ile	Phe	His	Asn	Thr	Asn	Val	Ser	Cys	Tyr	Pro
			20					25					30		
Met	Glu	Ser	His	Leu	Leu	Phe	Ser	Tyr	Asn	Asn	Thr	Ala	Val	Ser	Ile
		35					40					45			
Leu	Val	His	Arg	Phe	Phe	Asn	Ile	Xaa	Ile	Ser	Lys	Phe	Leu	Lys	Val

50 55 60  
 Ile Ser Trp Asp Arg Asn Arg Asn Gly Ile Gly Ile Ser Lys Ser  
 65 70 75

<210> 1524  
 <211> 121  
 <212> PRT  
 <213> Homo sapiens

<400> 1524  
 Met Pro Leu Phe Phe Thr Arg Phe His Pro Ala Leu Gly Pro Leu Ala  
 1 5 10 15  
 Leu Ser Leu Leu Ala Gly Phe Ala Ala Gly Ser Leu Gln Ala Ile Gly  
 20 25 30  
 Arg Thr Glu Glu Lys Gly Val Arg Val Leu Thr Ser Gln Ala Pro Pro  
 35 40 45  
 Tyr Arg Val Met Gly Gln Leu His Ser Ser Thr Lys Gly Phe Ser Phe  
 50 55 60  
 Cys Gln Gly Val Cys Pro Arg Ala Leu Ser Leu Trp Val Thr Thr Pro  
 65 70 75 80  
 Leu Phe Leu Pro Pro Ser Pro Arg Leu Ala Met Val Pro Thr Val Ser  
 85 90 95  
 Cys Pro Gly Tyr Cys Pro Ser Cys Phe Ser Val Ser Cys Leu Cys Phe  
 100 105 110  
 Thr Thr Gly Pro Ser Ser Asn Ser Ala  
 115 120

<210> 1525  
 <211> 91  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (19)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1525  
 Met Gly Pro Val Ser Glu Leu Ser Ile Phe Ile Leu Leu Phe Val Phe  
 1 5 10 15  
 Cys Phe Xaa Phe Ser Leu Met Pro Asp Ile Arg Arg Thr Leu His Phe  
 20 25 30  
 Trp Leu His Ser Leu Leu Tyr Pro His Glu Thr Asp Gln Cys Leu Gln  
 35 40 45  
 Ser Ser Ala Ile Pro Phe Gln Val Phe Tyr Val Gln Gln Lys Lys Arg

	50					55					60						
Ala	Ser	Leu	Ser	Ser	Ser	Ser	His	Ile	Ile	Lys	Gly	Ile	Ala	Pro	Leu		
65						70				75					80		
Leu	Asn	Gln	Ser	Val	Asn	His	Ser	Gly	Pro	Ile							
				85					90								

<210> 1526

<211> 66

<212> PRT

<213>. Homo sapiens

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

<222> (4)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

 $\langle 222 \rangle$  (13)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1526

Ser Thr Leu Xaa Val Thr Phe Ile Cys Ser Ser Arg Xaa Leu Leu Arg  
1 5 10 15

Glu Arg Gly Ala Val Leu Lys Thr Asn Pro Ile Pro Ile Leu Leu Lys  
20 25 30

Lys Pro Leu Leu Cys Pro Ser Phe Ile His Asn Leu Val Pro His Pro  
35 40 45

His Leu Pro Gln Leu Leu Leu Phe Ser Asn Phe Leu Cys Arg Cys Pro  
50 55 60

Tyr His  
65

<210> 1527

<211> 91

<212> PRT

<213> Homo sapiens

<400> 1527

Met Gly Pro Val Ser Glu Leu Ser Ile Phe Ile Leu Leu Phe Val Phe  
1 5 10 15

Cys Phe Val Phe Ser Leu Met Pro Asp Ile Arg Arg Thr Leu His Phe  
20 25 30

Trp Leu His Ser Leu Leu Tyr Pro His Glu Thr Asp Gln Cys Leu Gln  
35 40 45

Ser Ser Ala Ile Pro Phe Gln Val Phe Tyr Val Gln Gln Lys Lys Arg  
50 55 60



Ala Ser Leu Ser Ser Ser Ser His Ile Ile Lys Gly Ile Ala Pro Leu  
65 70 75 80

Leu Asn Gln Ser Val Asn His Ser Gly Pro Ile  
85 90

<210> 1528

<211> 336

<212> PRT

<213> Homo sapiens

<400> 1528

Met Ala Leu Ala Arg Pro Val Arg Leu Phe Ser Leu Val Thr Arg Leu  
1 5 10 15

Leu Leu Ala Pro Arg Arg Gly Leu Thr Val Arg Ser Pro Asp Glu Pro  
20 25 30

Leu Pro Val Val Arg Ile Pro Val Ala Leu Gln Arg Gln Leu Glu Gln  
35 40 45

Arg Gln Ser Arg Arg Arg Asn Leu Pro Arg Pro Val Leu Val Arg Pro  
50 55 60

Gly Pro Leu Leu Val Ser Ala Arg Arg Pro Glu Leu Asn Gln Pro Ala  
65 70 75 80

Arg Leu Thr Leu Gly Arg Trp Glu Arg Ala Pro Leu Ala Ser Gln Gly  
85 90 95

Trp Lys Ser Arg Arg Ala Arg Arg Asp His Phe Ser Ile Glu Arg Ala  
100 105 110

Gln Gln Glu Ala Pro Ala Val Arg Lys Leu Ser Ser Lys Gly Ser Phe  
115 120 125

Ala Asp Leu Gly Leu Glu Pro Arg Val Leu His Ala Leu Gln Glu Ala  
130 135 140

Ala Pro Glu Val Val Gln Pro Thr Thr Val Gln Ser Ser Thr Ile Pro  
145 150 155 160

Ser Leu Leu Arg Gly Arg His Val Val Cys Ala Ala Glu Thr Gly Ser  
165 170 175

Gly Lys Thr Leu Ser Tyr Leu Leu Pro Leu Leu Gln Arg Leu Leu Gly  
180 185 190

Gln Pro Ser Leu Asp Ser Leu Pro Ile Pro Ala Pro Arg Gly Leu Val  
195 200 205

Leu Val Pro Ser Arg Glu Leu Ala Gln Gln Val Arg Ala Val Ala Gln  
210 215 220

Pro Leu Gly Arg Ser Leu Gly Leu Leu Val Arg Asp Leu Glu Gly Gly  
225 230 235 240

His	Gly	Met	Arg	Arg	Ile	Arg	Leu	Gln	Leu	Ser	Arg	Gln	Pro	Ser	Ala
				245					250					255	
Asp	Val	Leu	Val	Ala	Thr	Pro	Gly	Ala	Leu	Trp	Lys	Ala	Leu	Lys	Ser
			260					265					270		
Arg	Leu	Ile	Ser	Leu	Glu	Gln	Leu	Ser	Phe	Leu	Val	Leu	Asp	Glu	Ala
		275					280					285			
Asp	Thr	Leu	Leu	Asp	Glu	Ser	Phe	Leu	Glu	Leu	Val	Asp	Tyr	Ile	Leu
	290					295					300				
Glu	Lys	Ser	His	Ile	Ala	Glu	Gly	Pro	Ala	Asp	Leu	Glu	Asp	Pro	Phe
305					310					315					320
Asn	Pro	Lys	Ala	Gln	Leu	Val	Leu	Val	Gly	Ala	Thr	Phe	Pro	Glu	Val
				325					330					335	

<210> 1529

<211> 336

<212> PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

<221> SITE

$\langle 222 \rangle$  (224)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1529

Met Ala Leu Ala Arg Pro Val Arg Leu Phe Ser Leu Val Thr Arg Leu  
1 5 10 15

Leu Leu Ala Pro Arg Arg Gly Leu Thr Val Arg Ser Pro Asp Glu Pro  
20 25 30

Leu Pro Val Val Arg Ile Pro Val Ala Leu Gln Arg Gln Leu Glu Gln  
35 40 45

Arg Gln Ser Arg Arg Arg Asn Leu Pro Arg Pro Val Leu Val Arg Pro  
50 55 60

Gly Pro Leu Leu Val Ser Ala Arg Arg Pro Glu Leu Asn Gln Pro Ala  
65 70 75 80

Arg Leu Thr Leu Gly Arg Trp Glu Arg Ala Pro Leu Ala Ser Gln Gly  
85 90 95

Trp Lys Ser Arg Arg Ala Arg Arg Asp His Phe Ser Ile Glu Arg Ala  
100 105 110

Gln Gln Glu Ala Pro Ala Val Arg Lys Leu Ser Ser Lys Gly Ser Phe  
115 120 125

Ala Asp Leu Gly Leu Glu Pro Arg Val Leu His Ala Leu Gln Glu Ala  
130 135 140

Ala Pro Glu Val Val Gln Pro Thr Thr Val Gln Ser Ser Thr Ile Pro  
 145 150 155 160  
 Ser Leu Leu Arg Gly Arg His Val Val Cys Ala Ala Glu Thr Gly Ser  
 165 170 175  
 Gly Lys Thr Leu Ser Tyr Leu Leu Pro Leu Leu Gln Arg Leu Leu Gly  
 180 185 190  
 Gln Pro Ser Leu Asp Ser Leu Pro Ile Pro Ala Pro Arg Gly Leu Val  
 195 200 205  
 Leu Val Pro Ser Arg Glu Leu Ala Gln Gln Val Arg Ala Val Ala Xaa  
 210 215 220  
 Pro Leu Gly Arg Ser Leu Gly Leu Leu Val Arg Asp Leu Glu Gly Gly  
 225 230 235 240  
 His Gly Met Arg Arg Ile Arg Leu Gln Leu Ser Arg Gln Pro Ser Ala  
 245 250 255  
 Asp Val Leu Val Ala Thr Pro Gly Ala Leu Trp Lys Ala Leu Lys Ser  
 260 265 270  
 Arg Leu Ile Ser Leu Glu Gln Leu Ser Phe Leu Val Leu Asp Glu Ala  
 275 280 285  
 Asp Thr Leu Leu Asp Glu Ser Phe Leu Glu Leu Val Asp Tyr Ile Leu  
 290 295 300  
 Glu Lys Ser His Ile Ala Glu Gly Pro Ala Asp Leu Glu Asp Pro Phe  
 305 310 315 320  
 Asn Pro Lys Ala Gln Leu Val Leu Val Gly Ala Thr Phe Pro Glu Val  
 325 330 335

&lt;210&gt; 1530

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1530

Met Ser Phe Arg Ser Glu Leu Ala Met Trp Phe Gln Ala Ala Leu Val  
 1 5 10 15  
 Ser Ser Leu Val Leu Pro Thr Pro Pro Gly Ser Gly Gly Thr Ser Arg  
 20 25 30  
 Arg Lys Lys Trp Ile Lys Ser Trp Arg Asp Phe Lys Gln Tyr Leu Thr  
 35 40 45  
 His Ser Ser Arg His Asp Ser His Gln Leu Arg Ser Ser Asn Ala Phe  
 50 55 60

Leu Phe Asp Ala Gln Glu Asp Pro Ser Ala Leu Asp Ile Ala Ser Pro  
 65 70 75 80

Gly Gly Met Ala Ala Glu Asp Glu Ile Gln Arg Gln Arg  
 85 90

<210> 1531

<211> 219

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (41)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1531

Ala Ala Ala Thr Ala Ala Ser Leu Ser Pro Arg Gly Cys Arg Leu Arg  
 1 5 10 15

Thr Pro Ser Ser Asp Val Ser Pro Ser Arg Ala Pro Pro Pro Ser Ala  
 20 25 30

Ala Pro Leu Pro Thr Gly Arg Ala Xaa Met Ser Pro Ser Gly Arg Leu  
 35 40 45

Cys Leu Leu Thr Ile Val Gly Leu Ile Leu Pro Thr Arg Gly Gln Thr  
 50 55 60

Leu Lys Asp Thr Thr Ser Ser Ser Ala Asp Ser Thr Ile Met Asp  
 65 70 75 80

Ile Gln Val Pro Thr Arg Ala Pro Asp Ala Val Tyr Thr Glu Leu Gln  
 85 90 95

Pro Thr Ser Pro Thr Pro Thr Trp Pro Ala Asp Glu Thr Pro Gln Pro  
 100 105 110

Gln Thr Gln Thr Gln Gln Leu Glu Gly Thr Asp Gly Pro Leu Val Thr  
 115 120 125

Asp Pro Glu Thr His Lys Ser Thr Lys Ala Ala His Pro Thr Asp Asp  
 130 135 140

Thr Thr Thr Leu Ser Glu Arg Pro Ser Pro Ser Thr Asp Val Gln Thr  
 145 150 155 160

Asp Pro Gln Thr Leu Lys Pro Ser Gly Phe His Glu Asp Asp Pro Phe  
 165 170 175

Phe Tyr Asp Glu His Thr Leu Arg Lys Arg Gly Leu Leu Val Ala Ala  
 180 185 190

Val Leu Phe Ile Thr Gly Ile Ile Ile Leu Thr Ser Gly Lys Cys Arg  
 195 200 205

Gln Leu Ser Arg Leu Cys Arg Asn His Cys Arg  
 210 215

<210> 1532  
 <211> 178  
 <212> PRT  
 <213> Homo sapiens

<400> 1532  
 Met Ser Pro Ser Gly Arg Leu Cys Leu Leu Thr Ile Val Gly Leu Ile  
     1                    5                    10                    15  
 Leu Pro Thr Arg Gly Gln Thr Leu Lys Asp Thr Thr Ser Ser Ser Ser  
                     20                    25                    30  
 Ala Asp Ser Thr Ile Met Asp Ile Gln Val Pro Thr Arg Ala Pro Asp  
                     35                    40                    45  
 Ala Val Tyr Thr Glu Leu Gln Pro Thr Ser Pro Thr Pro Thr Trp Pro  
                     50                    55                    60  
 Ala Asp Glu Thr Pro Gln Pro Gln Thr Gln Thr Gln Gln Leu Glu Gly  
     65                    70                    75                    80  
 Thr Asp Gly Pro Leu Val Thr Asp Pro Glu Thr His Lys Ser Thr Lys  
                     85                    90                    95  
 Ala Ala His Pro Thr Asp Asp Thr Thr Thr Leu Ser Glu Arg Pro Ser  
                     100                    105                    110  
 Pro Ser Thr Asp Val Gln Thr Asp Pro Gln Thr Leu Lys Pro Ser Gly  
                     115                    120                    125  
 Phe His Glu Asp Asp Pro Phe Phe Tyr Asp Glu His Thr Leu Arg Lys  
     130                    135                    140  
 Arg Gly Leu Leu Val Ala Ala Val Leu Phe Ile Thr Gly Ile Ile Ile  
     145                    150                    155                    160  
 Leu Thr Ser Gly Lys Cys Arg Gln Leu Ser Arg Leu Cys Arg Asn His  
                     165                    170                    175  
 Cys Arg

<210> 1533  
 <211> 152  
 <212> PRT  
 <213> Homo sapiens

<400> 1533  
 Met Glu Leu Pro Ala Val Asn Leu Lys Val Ile Leu Leu Gly His Trp  
     1                    5                    10                    15  
 Leu Leu Thr Thr Trp Gly Cys Ile Val Phe Ser Gly Ser Tyr Ala Trp  
                     20                    25                    30  
 Ala Asn Phe Thr Ile Leu Ala Leu Gly Val Trp Ala Val Ala Gln Arg

35                                      40                                      45  
 Asp Ser Ile Asp Ala Ile Ser Met Phe Leu Gly Gly Leu Leu Ala Thr  
     50                                      55                                      60  
 Ile Phe Leu Asp Ile Val His Ile Ser Ile Phe Tyr Pro Arg Val Ser  
     65                                      70                                      75                                      80  
 Leu Thr Asp Thr Gly Arg Phe Gly Val Gly Met Ala Ile Leu Ser Leu  
                                     85                                      90                                      95  
 Leu Leu Lys Pro Leu Ser Cys Cys Phe Val Tyr His Met Tyr Arg Glu  
                                     100                                      105                                      110  
 Arg Gly Gly Phe Leu Gly Ser Ser Gln Asp Arg Ser Ala Tyr Gln Thr  
                                     115                                      120                                      125  
 Ile Asp Ser Ala Glu Ala Pro Ala Asp Pro Phe Ala Val Pro Glu Gly  
                                     130                                      135                                      140  
 Arg Ser Gln Asp Ala Arg Gly Tyr  
 145                                      150

<210> 1534  
 <211> 159  
 <212> PRT  
 <213> Homo sapiens

<400> 1534  
 Met Glu Leu Pro Ala Val Asn Leu Lys Val Ile Leu Leu Gly His Trp  
     1                                      5                                      10                                      15  
 Leu Leu Thr Thr Trp Gly Cys Ile Val Phe Ser Gly Ser Tyr Ala Trp  
                                     20                                      25                                      30  
 Ala Asn Phe Thr Ile Leu Ala Leu Gly Val Trp Ala Val Ala Gln Arg  
                                     35                                      40                                      45  
 Asp Ser Ile Asp Ala Ile Ser Met Phe Leu Gly Gly Leu Leu Ala Thr  
     50                                      55                                      60  
 Ile Phe Leu Asp Ile Val His Ile Ser Ile Phe Tyr Pro Arg Val Ser  
     65                                      70                                      75                                      80  
 Leu Thr Asp Thr Gly Arg Phe Gly Val Gly Met Ala Ile Leu Ser Leu  
                                     85                                      90                                      95  
 Leu Leu Lys Pro Leu Ser Cys Cys Phe Val Tyr His Met Tyr Arg Glu  
                                     100                                      105                                      110  
 Arg Gly Gly Glu Leu Leu Val His Thr Gly Phe Leu Gly Ser Ser Gln  
                                     115                                      120                                      125  
 Asp Arg Ser Ala Tyr Gln Thr Ile Asp Ser Ala Glu Ala Pro Ala Asp  
     130                                      135                                      140  
 Pro Phe Ala Val Pro Glu Gly Arg Ser Gln Asp Ala Arg Gly Tyr  
 145                                      150                                      155

<210> 1535  
 <211> 91  
 <212> PRT  
 <213> Homo sapiens

<400> 1535  
 Met Pro Leu Ala Pro Leu Leu Leu Val Leu Ser Pro Phe Ser Phe Asp  
           1                  5                  10                  15  
 Gln Val Val Gln Ala Arg Leu Glu Val Pro Val Phe Lys Gln Arg Asp  
                   20                  25                  30  
 Leu Cys Asn Tyr Val Leu Ile Leu Val Gly Ala Gln Leu Lys Pro Leu  
           35                  40                  45  
 Ala Met Leu Val Lys Asn Ile Arg Asp Tyr Arg Leu Glu Pro Pro Cys  
           50                  55                  60  
 Pro Ala Cys Ile Asp Thr Phe Tyr Pro Thr Phe Lys Thr Gly Met Phe  
           65                  70                  75                  80  
 Ser Leu Cys Phe Lys Met Pro Leu Lys Tyr Phe  
                   85                  90

<210> 1536  
 <211> 64  
 <212> PRT  
 <213> Homo sapiens

<400> 1536  
 Ser Ala Thr His Gln Gln Ala Leu Val Cys Asp Val Leu Leu Pro Val  
           1                  5                  10                  15  
 Ser Met Cys Ser His Glu Asn Leu Tyr Ile Leu Cys Ser Gly Val Ser  
           20                  25                  30  
 Tyr Phe Ile Phe Phe Phe Ser Cys Val Thr Ser Val Thr Ser Gly Leu  
           35                  40                  45  
 Gly Ile Pro Ser Tyr Pro Glu Val Arg Lys Tyr Ser Ser Ile Phe Phe  
           50                  55                  60

<210> 1537  
 <211> 91  
 <212> PRT  
 <213> Homo sapiens

<400> 1537  
 Met Pro Leu Ala Pro Leu Leu Leu Val Leu Ser Pro Phe Ser Phe Asp  
           1                  5                  10                  15

Gln Val Val Gln Ala Arg Leu Glu Val Pro Val Phe Lys Gln Arg Asp  
                   20                                  25                                  30

Leu Cys Asn Tyr Val Leu Ile Leu Val Gly Ala Gln Leu Lys Pro Leu  
                   35                                  40                                  45

Ala Met Leu Val Lys Asn Ile Arg Asp Tyr Arg Leu Glu Pro Pro Cys  
                   50                                  55                                  60

Pro Ala Cys Ile Asp Thr Phe Tyr Pro Thr Phe Lys Thr Gly Met Phe  
                   65                                  70                                  75                                  80

Ser Leu Cys Phe Lys Met Pro Leu Lys Tyr Phe  
                                   85                                  90

<210> 1538

<211> 112

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (93)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (98)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (104)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (106)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1538

Met Asp Leu Trp Thr Thr Ser Phe Phe Phe Phe Ala Val Met His Asn  
           1                                  5                                  10                                  15

Ala Ala Met Asn Ile Asn Val Gln Val Ser Glu Ser Gly Phe Ser Phe  
                   20                                  25                                  30

Trp Gly Arg Tyr Leu Gly Val Glu Leu Leu Gly Cys Val Val Asn Leu  
                   35                                  40                                  45

Tyr Leu Phe Lys Lys Trp Pro Asn Cys Phe Leu Asn Gly Cys Ile Ile  
                   50                                  55                                  60

Leu His Pro His Gln Gln Tyr Ile Arg Val Ser Cys Phe Ser Thr Ser  
                   65                                  70                                  75                                  80

Tyr Leu Leu Met Ala Phe Lys Asn Tyr Arg His Ser Xaa Lys Cys Glu



	85		90		95
Val Xaa Pro His Cys Ser Leu Xaa Cys Xaa Phe Leu Ile Thr Met Met					
	100		105		110

&lt;210&gt; 1539

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1539

Met Asp Leu Trp Thr Thr Ser Phe Phe Phe Phe Ala Val Met His Asn																			
1				5					10						15				
Ala Ala Met Asn Ile Asn Val Gln Val Ser Glu Ser Gly Phe Ser Phe																			
			20					25							30				
Trp Gly Arg Tyr Leu Gly Val Glu Leu Leu Gly Cys Val Val Asn Leu																			
			35					40							45				
Tyr Leu Phe Lys Lys Trp Pro Asn Cys Phe Leu Asn Gly Cys Ile Ile																			
			50				55						60						
Leu His Pro His Gln Gln Tyr Ile Arg Val Ser Cys Phe Ser Thr Ser																			
			65				70						75						80
Tyr Leu Leu Met Ala Phe Lys Asn Tyr Arg His Ser Cys Lys Cys Glu																			
							85						90						95
Val Val Ser His Cys Ser Phe Ser Leu His Phe Pro Asn Asn Asn Asp																			
			100										105						110

Val

&lt;210&gt; 1540

&lt;211&gt; 113

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1540

Met Asp Leu Trp Thr Thr Ser Phe Phe Phe Phe Ala Val Met His Asn																			
1					5					10								15	
Ala Ala Met Asn Ile Asn Val Gln Val Ser Glu Ser Gly Phe Ser Phe																			
			20							25								30	
Trp Gly Arg Tyr Leu Gly Val Glu Leu Leu Gly Cys Val Val Asn Leu																			
			35							40								45	
Tyr Leu Phe Lys Lys Trp Pro Asn Cys Phe Leu Asn Gly Cys Ile Ile																			
			50						55									60	

Leu His Pro His Gln Gln Tyr Ile Arg Val Ser Cys Phe Ser Thr Ser  
 65 70 75 80

Tyr Leu Leu Met Ala Phe Lys Asn Tyr Arg His Ser Cys Lys Cys Glu  
 85 90 95

Val Val Ser His Cys Ser Phe Ser Leu His Phe Pro Asn Asn Asn Asp  
 100 105 110

Val

<210> 1541

<211> 111

<212> PRT

<213> Homo sapiens

<400> 1541

Met Arg Met Ser Leu Ala Asp Ser Leu Ala Cys Ser Val Cys Val Ala  
 1 5 10 15

Leu Thr Ala Ala Ala Arg Leu Leu Arg Ser Arg Pro Ser Ser Cys Ser  
 20 25 30

Ser Phe Ser Trp Ile Ser Gly Thr Ser Ser Ser Pro Ser Phe Leu Gly  
 35 40 45

Ser Phe Thr Ser Leu Leu Gly Ser Ser Leu Ser Ser Leu Gly Asp Ser  
 50 55 60

Leu Leu Gly Arg Gly Thr Leu Gly Asn Phe Trp Glu Val Leu Ile Ser  
 65 70 75 80

Thr Ser Thr Ser Ser Trp Ala Asp Phe Ser Ser Leu Val Ser Thr Ser  
 85 90 95

Pro Lys Val Arg Val Pro Leu Arg Pro Ile Phe Thr Cys Phe Leu  
 100 105 110

<210> 1542

<211> 148

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (3)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (37)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (41)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (43)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (99)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (121)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1542  
 Gly Phe Xaa Ala Ala Ala Ala Ala Ala Val Val Ala Ala Ala Ala  
   1                  5                  10                  15  
 Ala Ala Ser Val Glu Gly Arg Gln Pro Pro Gly Leu Gly Ala Val Gly  
                   20                  25                  30  
 Pro Ala Gly Arg Xaa Ala Gly Ser Xaa Gly Xaa Arg Met Pro Ala Gly  
           35                  40                  45  
 Arg Val Ala Gly Ala Val Thr Gly Leu Gly Val Ser Trp Leu Arg Gly  
   50                  55                  60  
 Lys Asn Ser Gly Val Pro Gly Ala Ala Leu Pro Pro Ala Ala Pro Ser  
   65                  70                  75                  80  
 Val Ala Ser Leu Val Ala His Ser Gly Pro Ala Val Gly Pro Pro Leu  
                   85                  90                  95  
 Ser Pro Xaa Ser Val Pro Gln Gly Gly Tyr Ser Lys Ser Gly Leu Pro  
           100                  105                  110  
 Leu Gln Asp Ala Gly Ser Pro Trp Xaa His Cys Arg Gly Thr Asp Cys  
   115                  120                  125  
 Gly Ser Ser Met Leu Asn Gly Val Glu Ala Gly Leu Ala Ala Ala Ala  
   130                  135                  140  
  
 Ser Cys Cys His  
 145

<210> 1543  
 <211> 191  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (180)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (181)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (190)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1543  
 Met Ser Ser Asn Thr Met Leu Gln Lys Thr Leu Leu Ile Leu Ile Ser  
 1 5 10 15  
 Phe Ser Val Val Thr Trp Met Ile Phe Ile Ile Ser Gln Asn Phe Thr  
 20 25 30  
 Lys Leu Trp Ser Ala Leu Asn Leu Ser Ile Ser Val His Tyr Trp Asn  
 35 40 45  
 Asn Ser Ala Lys Ser Leu Phe Pro Lys Thr Ser Leu Ile Pro Leu Lys  
 50 55 60  
 Pro Leu Thr Glu Thr Glu Leu Arg Ile Lys Glu Ile Ile Glu Lys Leu  
 65 70 75 80  
 Asp Gln Gln Ile Pro Pro Arg Pro Phe Thr His Val Asn Thr Thr Thr  
 85 90 95  
 Ser Ala Thr His Ser Thr Ala Thr Ile Leu Asn Pro Arg Asp Thr Tyr  
 100 105 110  
 Cys Arg Gly Asp Gln Leu Asp Ile Leu Leu Glu Val Arg Asp His Leu  
 115 120 125  
 Gly Gln Arg Lys Gln Tyr Gly Gly Asp Phe Leu Arg Ala Arg Met Ser  
 130 135 140  
 Phe Pro Ala Leu Thr Ala Gly Ala Ser Gly Lys Val Met Asp Phe Thr  
 145 150 155 160  
 Met Ala Pro Thr Trp Gln Leu His Ser Gly Leu Gly Gly Pro Gly Leu  
 165 170 175  
 Pro Gly Ser Xaa Xaa Tyr Ser Pro Gln Val Glu Gly Ala Xaa Gly  
 180 185 190

<210> 1544  
 <211> 165  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (2)  
 <223> Xaa equals any of the naturally occurring L-amino acids.

<220>  
 <221> SITE  
 <222> (5)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (7)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (28)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (33)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1544  
 Asn Xaa Phe Ala Xaa Trp Xaa Gln Lys Asp Thr Leu Arg Ile Gln Trp  
     1                    5                    10                    15  
 Lys Lys His Ser Tyr Pro Phe Val Thr Phe Gln Xaa Tyr Ser Leu Ile  
             20                    25                    30  
 Xaa His Asp Tyr Ile Pro Arg Glu Ile Asp Arg Leu Ser Gly Asp Lys  
             35                    40                    45  
 Asn Thr Ala Ile Val Ile Thr Phe Gly Gln His Phe Arg Pro Phe Pro  
     50                    55                    60  
 Ile Asp Ile Phe Ile Arg Arg Ala Ile Gly Val Gln Lys Ala Ile Glu  
     65                    70                    75                    80  
 Arg Leu Phe Leu Arg Ser Pro Ala Thr Lys Val Ile Ile Lys Thr Glu  
             85                    90                    95  
 Asn Ile Arg Glu Met His Ile Glu Thr Glu Arg Phe Gly Asp Phe His  
     100                    105                    110  
 Gly Tyr Ile His Tyr Leu Ile Met Lys Asp Ile Phe Lys Asp Leu Asn  
     115                    120                    125  
 Val Gly Ile Ile Asp Ala Trp Asp Met Thr Ile Ala Tyr Gly Thr Asp  
     130                    135                    140  
 Thr Ile His Pro Pro Asp His Val Ile Gly Asn Gln Ile Asn Met Phe  
     145                    150                    155                    160  
 Leu Asn Tyr Ile Cys  
             165

<210> 1545  
 <211> 303  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (176)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (177)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (179)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (192)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (294)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (297)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (302)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1545  
 Met Ser Ser Asn Thr Met Leu Gln Lys Thr Leu Leu Ile Leu Ile Ser  
 1 5 10 15  
 Phe Ser Val Val Thr Trp Met Ile Phe Ile Ile Ser Gln Asn Phe Thr  
 20 25 30  
 Lys Leu Trp Ser Ala Leu Asn Leu Ser Ile Ser Val His Tyr Trp Asn  
 35 40 45  
 Asn Ser Ala Lys Ser Leu Phe Pro Lys Thr Ser Leu Ile Pro Leu Lys  
 50 55 60  
 Pro Leu Thr Glu Thr Glu Leu Arg Ile Lys Glu Ile Ile Glu Lys Leu  
 65 70 75 80  
 Asp Gln Gln Ile Pro Pro Arg Pro Phe Thr His Val Asn Thr Thr Thr  
 85 90 95  
 Ser Ala Thr His Ser Thr Ala Thr Ile Leu Asn Pro Arg Asp Thr Tyr  
 100 105 110  
 Cys Arg Gly Asp Gln Leu Asp Ile Leu Leu Glu Val Arg Asp His Leu  
 115 120 125

Gly Gln Arg Lys Gln Tyr Gly Gly Asp Phe Leu Arg Ala Arg Met Ser  
 130 135 140  
 Ser Pro Ala Leu Thr Ala Gly Ala Ser Gly Lys Val Met Asp Phe Asn  
 145 150 155 160  
 Asn Gly Thr Tyr Leu Val Ser Phe Thr Leu Phe Trp Glu Gly Gln Xaa  
 165 170 175  
 Xaa Leu Xaa Leu Leu Leu Ile His Pro Ser Glu Gly Ala Ser Ala Xaa  
 180 185 190  
 Trp Arg Ala Arg Asn Gln Gly Tyr Asp Lys Ile Ile Phe Lys Gly Lys  
 195 200 205  
 Phe Val Asn Gly Thr Ser His Val Phe Thr Glu Cys Gly Leu Thr Leu  
 210 215 220  
 Asn Ser Asn Ala Glu Leu Cys Glu Tyr Leu Asp Asp Arg Asp Gln Glu  
 225 230 235 240  
 Ala Phe Tyr Cys Met Lys Pro Gln His Met Pro Cys Glu Ala Leu Thr  
 245 250 255  
 Tyr Met Thr Thr Arg Asn Arg Glu Val Ser Tyr Leu Thr Asp Lys Glu  
 260 265 270  
 Asn Ser Leu Phe His Arg Ser Lys Val Gly Val Glu Met Met Lys Asp  
 275 280 285  
 Arg Lys His Ile Asp Xaa Thr Asn Xaa Asn Lys Arg Glu Xaa Ile  
 290 295 300

<210> 1546  
 <211> 1  
 <212> PRT  
 <213> Homo sapiens

<400> 1546  
 Met  
 1

<210> 1547  
 <211> 547  
 <212> PRT  
 <213> Homo sapiens

<400> 1547  
 Met Ser Ser Asn Thr Met Leu Gln Lys Thr Leu Leu Ile Leu Ile Ser  
 1 5 10 15  
 Phe Ser Val Val Thr Trp Met Ile Phe Ile Ile Ser Gln Asn Phe Thr  
 20 25 30  
 Lys Leu Trp Ser Ala Leu Asn Leu Ser Ile Ser Val His Tyr Trp Asn

	35		40		45														
Asn	Ser	Ala	Lys	Ser	Leu	Phe	Pro	Lys	Thr	Ser	Leu	Ile	Pro	Leu	Lys				
	50					55					60								
Pro	Leu	Thr	Glu	Thr	Glu	Leu	Arg	Ile	Lys	Glu	Ile	Ile	Glu	Lys	Leu				
65					70					75					80				
Asp	Gln	Gln	Ile	Pro	Pro	Arg	Pro	Phe	Thr	His	Val	Asn	Thr	Thr	Thr				
				85					90					95					
Ser	Ala	Thr	His	Ser	Thr	Ala	Thr	Ile	Leu	Asn	Pro	Arg	Asp	Thr	Tyr				
			100					105					110						
Cys	Arg	Gly	Asp	Gln	Leu	Asp	Ile	Leu	Leu	Glu	Val	Arg	Asp	His	Leu				
		115					120					125							
Gly	Gln	Arg	Lys	Gln	Tyr	Gly	Gly	Asp	Phe	Leu	Arg	Ala	Arg	Met	Ser				
130						135					140								
Ser	Pro	Ala	Leu	Thr	Ala	Gly	Ala	Ser	Gly	Lys	Val	Met	Asp	Phe	Asn				
145					150					155					160				
Asn	Gly	Thr	Tyr	Leu	Val	Ser	Phe	Thr	Leu	Phe	Trp	Glu	Gly	Gln	Val				
				165					170					175					
Ser	Leu	Ser	Leu	Leu	Leu	Ile	His	Pro	Ser	Glu	Gly	Ala	Ser	Ala	Leu				
			180					185					190						
Trp	Arg	Ala	Arg	Asn	Gln	Gly	Tyr	Asp	Lys	Ile	Ile	Phe	Lys	Gly	Lys				
		195					200					205							
Phe	Val	Asn	Gly	Thr	Ser	His	Val	Phe	Thr	Glu	Cys	Gly	Leu	Thr	Leu				
	210					215					220								
Asn	Ser	Asn	Ala	Glu	Leu	Cys	Glu	Tyr	Leu	Asp	Asp	Arg	Asp	Gln	Glu				
225					230					235					240				
Ala	Phe	Tyr	Cys	Met	Lys	Pro	Gln	His	Met	Pro	Cys	Glu	Ala	Leu	Thr				
				245					250					255					
Tyr	Met	Thr	Thr	Arg	Asn	Arg	Glu	Val	Ser	Tyr	Leu	Thr	Asp	Lys	Glu				
			260					265					270						
Asn	Ser	Leu	Phe	His	Arg	Ser	Lys	Val	Gly	Val	Glu	Met	Met	Lys	Asp				
		275					280					285							
Arg	Lys	His	Ile	Asp	Val	Thr	Asn	Cys	Asn	Lys	Arg	Glu	Lys	Ile	Glu				
		290				295					300								
Glu	Thr	Cys	Gln	Val	Gly	Met	Lys	Pro	Pro	Val	Pro	Gly	Gly	Tyr	Thr				
305					310					315					320				
Leu	Gln	Gly	Lys	Trp	Ile	Thr	Thr	Phe	Cys	Asn	Gln	Val	Gln	Leu	Asp				
				325					330					335					
Thr	Ile	Lys	Ile	Asn	Gly	Cys	Leu	Lys	Gly	Lys	Leu	Ile	Tyr	Leu	Leu				
			340					345					350						
Gly	Asp	Ser	Thr	Leu	Arg	Gln	Trp	Ile	Tyr	Tyr	Phe	Pro	Lys	Val	Val				



355                      360                      365  
 Lys Thr Leu Lys Phe Phe Asp Leu His Glu Thr Gly Ile Phe Lys Lys  
     370                      375                      380  
 His Leu Leu Leu Asp Ala Glu Arg His Thr Gln Ile Gln Trp Lys Lys  
     385                      390                      395                      400  
 His Ser Tyr Pro Phe Val Thr Phe Gln Leu Tyr Ser Leu Ile Asp His  
                     405                      410                      415  
 Asp Tyr Ile Pro Arg Glu Ile Asp Arg Leu Ser Gly Asp Lys Asn Thr  
                     420                      425                      430  
 Ala Ile Val Ile Thr Phe Gly Gln His Phe Arg Pro Phe Pro Ile Asp  
                     435                      440                      445  
 Ile Phe Ile Arg Arg Ala Ile Gly Val Gln Lys Ala Ile Glu Arg Leu  
                     450                      455                      460  
 Phe Leu Arg Ser Pro Ala Thr Lys Val Ile Ile Lys Thr Glu Asn Ile  
     465                      470                      475                      480  
 Arg Glu Met His Ile Glu Thr Glu Arg Phe Gly Asp Phe His Gly Tyr  
                     485                      490                      495  
 Ile His Tyr Leu Ile Met Lys Asp Ile Phe Lys Asp Leu Asn Val Gly  
                     500                      505                      510  
 Ile Ile Asp Ala Trp Asp Met Thr Ile Ala Tyr Gly Thr Asp Thr Ile  
                     515                      520                      525  
 His Pro Pro Asp His Val Ile Gly Asn Gln Ile Asn Met Phe Leu Asn  
                     530                      535                      540  
 Tyr Ile Cys  
     545

&lt;210&gt; 1548

&lt;211&gt; 246

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (30)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (212)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (220)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (243)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1548

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Met Ala Ser Ala Val Arg Gly Ser Arg Pro Trp Pro Arg Leu Gly Leu
  1           5           10           15

Gln Leu Gln Phe Ala Ala Leu Leu Leu Gly Thr Leu Ser Xaa Gln Val
          20           25           30

His Thr Leu Arg Pro Glu Asn Leu Leu Leu Val Ser Thr Leu Asp Gly
      35           40           45

Ser Leu His Ala Leu Ser Lys Gln Thr Gly Asp Leu Lys Trp Thr Leu
      50           55           60

Arg Asp Asp Pro Val Ile Glu Gly Pro Met Tyr Val Thr Glu Met Ala
      65           70           75           80

Phe Leu Ser Asp Pro Ala Asp Gly Ser Leu Tyr Ile Leu Gly Thr Gln
          85           90           95

Lys Gln Gln Gly Leu Met Lys Leu Pro Phe Thr Ile Pro Glu Leu Val
          100          105          110

His Ala Ser Pro Cys Arg Ser Ser Asp Gly Val Phe Tyr Thr Gly Arg
      115           120           125

Lys Gln Asp Ala Trp Phe Val Val Asp Pro Glu Ser Gly Glu Thr Gln
      130           135           140

Met Thr Leu Thr Thr Glu Gly Pro Ser Thr Pro Arg Leu Tyr Ile Gly
      145           150           155           160

Arg Thr Gln Tyr Thr Val Thr Met His Asp Pro Arg Ala Pro Ala Leu
      165           170           175

Arg Trp Asn Thr Thr Tyr Arg Arg Tyr Ser Thr Pro Pro Met Asp Gly
      180           185           190

Ser Thr Gly Lys Tyr Met Ser Gln Leu Gly Val Leu Arg Glu Gly Pro
      195           200           205

Ala Ala His Xaa Gly Thr Pro Gly Ser Gly Thr Xaa Leu Leu Asp Thr
      210           215           220

Arg Asn Leu Gly Arg Ala Leu Gly Asn Gly Pro Ala Thr Pro Leu Gly
      225           230           235           240

Thr Lys Xaa Arg Ala Trp
          245

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&lt;210&gt; 1549

&lt;211&gt; 473

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (321)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (386)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (391)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1549

Met	Ala	Ser	Ala	Val	Arg	Gly	Ser	Arg	Pro	Trp	Pro	Arg	Leu	Gly	Leu
1				5					10					15	

Gln	Leu	Gln	Phe	Ala	Ala	Leu	Leu	Leu	Gly	Thr	Leu	Ser	Pro	Gln	Val
			20					25					30		

His	Thr	Leu	Arg	Pro	Glu	Asn	Leu	Leu	Leu	Val	Ser	Thr	Leu	Asp	Gly
		35					40					45			

Ser	Leu	His	Ala	Leu	Ser	Lys	Gln	Thr	Gly	Asp	Leu	Lys	Trp	Thr	Leu
	50					55					60				

Arg	Asp	Asp	Pro	Val	Ile	Glu	Gly	Pro	Met	Tyr	Val	Thr	Glu	Met	Ala
65					70					75					80

Phe	Leu	Ser	Asp	Pro	Ala	Asp	Gly	Ser	Leu	Tyr	Ile	Leu	Gly	Thr	Gln
				85					90					95	

Lys	Gln	Gln	Gly	Leu	Met	Lys	Leu	Pro	Phe	Thr	Ile	Pro	Glu	Leu	Val
			100					105					110		

His	Ala	Ser	Pro	Cys	Arg	Ser	Ser	Asp	Gly	Val	Phe	Tyr	Thr	Gly	Arg
		115					120					125			

Lys	Gln	Asp	Ala	Trp	Phe	Val	Val	Asp	Pro	Glu	Ser	Gly	Glu	Thr	Gln
130						135					140				

Met	Thr	Leu	Thr	Thr	Glu	Gly	Pro	Ser	Thr	Pro	Arg	Leu	Tyr	Ile	Gly
145					150					155					160

Arg	Thr	Gln	Tyr	Thr	Val	Thr	Met	His	Asp	Pro	Arg	Ala	Pro	Ala	Leu
				165					170					175	

Arg	Trp	Asn	Thr	Thr	Tyr	Arg	Arg	Tyr	Ser	Ala	Pro	Pro	Met	Asp	Gly
			180					185					190		

Ser	Pro	Gly	Lys	Tyr	Met	Ser	His	Leu	Ala	Ser	Cys	Gly	Met	Gly	Leu
		195					200					205			

Leu	Leu	Thr	Val	Asp	Pro	Gly	Ser	Gly	Thr	Val	Leu	Trp	Thr	Gln	Asp
	210					215					220				

Leu	Gly	Val	Pro	Val	Met	Gly	Val	Tyr	Thr	Trp	His	Gln	Asp	Gly	Leu
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

225                      230                      235                      240  
 Arg Gln Leu Pro His Leu Thr Leu Ala Arg Asp Thr Leu His Phe Leu  
                                  245                      250                      255  
 Ala Leu Arg Trp Gly His Ile Arg Leu Pro Ala Ser Gly Pro Arg Asp  
                                  260                      265                      270  
 Thr Ala Thr Leu Phe Ser Thr Leu Asp Thr Gln Leu Leu Met Thr Leu  
                                  275                      280                      285  
 Tyr Val Gly Lys Asp Glu Thr Gly Phe Tyr Val Ser Lys Ala Leu Val  
                                  290                      295                      300  
 His Thr Gly Val Ala Leu Val Pro Arg Gly Leu Thr Leu Ala Pro Ala  
 305                                   310                      315                      320  
 Xaa Gly Pro Thr Thr Asp Glu Val Thr Leu Gln Val Ser Gly Glu Arg  
                                  325                      330                      335  
 Glu Gly Ser Pro Ser Thr Ala Val Arg Tyr Pro Ser Gly Ser Val Ala  
                                  340                      345                      350  
 Leu Pro Ser Gln Trp Leu Leu Ile Gly His His Glu Leu Pro Pro Val  
                                  355                      360                      365  
 Leu His Thr Thr Met Leu Arg Val His Pro Thr Leu Gly Ser Gly Thr  
                                  370                      375                      380  
 Ala Xaa Thr Arg Pro Pro Xaa Asn Thr Gln Ala Pro Ala Phe Phe Leu  
 385                                   390                      395                      400  
 Glu Leu Leu Ser Leu Ser Arg Glu Lys Leu Trp Asp Ser Glu Leu His  
                                  405                      410                      415  
 Pro Glu Glu Lys Thr Pro Asp Ser Tyr Leu Gly Leu Gly Pro Gln Asp  
                                  420                      425                      430  
 Leu Leu Ala Ala Ser Leu Thr Ala Val Leu Leu Gly Gly Trp Ile Leu  
                                  435                      440                      445  
 Phe Val Met Arg Gln Gln Gln Pro Gln Val Val Glu Lys Gln Gln Glu  
                                  450                      455                      460  
 Thr Pro Leu Ala Pro Ala Ala Trp Gly  
 465                                   470

&lt;210&gt; 1550

&lt;211&gt; 98

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1550

Met Cys Met Arg Leu Cys Ala Ala Leu Leu Pro Ala Pro Cys Thr Leu  
 1                                   5                                   10                                   15

Arg Ala Ser Trp Gly Val Arg Gly Ala Gln Trp Gly Phe Ser Ser Leu  
                                  20                                   25                                   30

His Glu Pro Gly Asp Pro Arg Gly Gly Ser Ile Trp Asp Glu Pro Pro  
           35                                  40                                  45  
 Pro Pro Asn Ala Gln Ala Ser Pro Gln Asp Pro Gly Gly Gly His His  
           50                                  55                                  60  
 Ser Gly Lys Pro Gly Val Gly Val Gly Phe Gly Leu Ser Thr Phe Leu  
           65                                  70                                  75                                  80  
 Leu Gln Ile Pro Pro Thr His Pro Ser Pro Lys Ser Ser Pro Leu Ala  
                                   85                                  90                                  95  
 Leu Ala

<210> 1551  
 <211> 98  
 <212> PRT  
 <213> Homo sapiens

<400> 1551  
 Met Cys Met Arg Leu Cys Ala Ala Leu Leu Pro Ala Pro Cys Thr Leu  
   1                                  5                                  10                                  15  
 Arg Ala Ser Trp Gly Val Arg Gly Ala Gln Trp Gly Phe Ser Ser Leu  
           20                                  25                                  30  
 His Glu Pro Gly Asp Pro Arg Gly Gly Ser Ile Trp Asp Glu Pro Pro  
           35                                  40                                  45  
 Pro Pro Asn Ala Gln Ala Ser Pro Gln Asp Pro Gly Gly Gly His His  
           50                                  55                                  60  
 Ser Gly Lys Pro Gly Val Gly Val Gly Phe Gly Leu Ser Thr Phe Leu  
           65                                  70                                  75                                  80  
 Leu Gln Ile Pro Pro Thr His Pro Ser Pro Lys Ser Ser Pro Leu Ala  
                                   85                                  90                                  95  
 Leu Ala

<210> 1552  
 <211> 94  
 <212> PRT  
 <213> Homo sapiens

<400> 1552  
 Met Gly Val Leu Trp Tyr Thr Phe Trp Tyr Thr Phe Thr Leu Leu Glu  
   1                                  5                                  10                                  15  
 Cys Ser Arg Ser Ser Asn Asp Ser Arg Thr Leu Val Leu Ile Cys Leu  
           20                                  25                                  30  
 Ser Leu Leu Gly Phe Asp Phe Val Arg Val Leu Asn Ile Lys Leu Ala

	35		40		45	
Val Gly Glu Ser Thr Leu His Met Leu Ser Leu Pro Phe Ser Leu Arg						
50		55		60		
Leu Ser Pro Ala Leu Pro Phe Ser Pro Phe Leu Leu Leu Met Asn Lys						
65	70		75		80	
Pro Leu Ser Asp Val Gln Tyr Phe Asn Leu His Phe Ala Gly						
	85		90			

<210> 1553  
 <211> 49  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (1)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (2)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1553  
 Xaa Xaa Tyr Asp Glu Lys Leu Ile Phe Ile Gln Ile Leu Gln Thr Lys  
 1 5 10 15

Ala Thr Asp Lys Tyr Ser Glu Gln Val Ser Gln Val Gly Pro Gly Ala  
 20 25 30

Val Leu Thr Pro Val Ile Pro Ala Leu Trp Glu Ala Glu Ala Gly Gly  
 35 40 45

Ser

<210> 1554  
 <211> 141  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (140)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1554  
 Met Gly Pro Arg Gly Cys Ala Leu Ala His Ser Leu Leu Pro Leu Leu  
 1 5 10 15

Cys Gln His Val Trp Thr Ser Pro Arg Tyr Cys Arg Gln Cys Thr Arg  
 20 25 30

Glu Pro Arg His Cys Cys Pro Ala Pro Ala Ser Ala Gly Val Gln Tyr  
           35                          40                          45  
 Met Cys Ala Tyr Gly Cys His His Pro Thr Phe Ala Gly Val Tyr Thr  
           50                          55                          60  
 Pro Ser His Thr Thr Val Ala Thr Ser Ile Cys Thr Gln Thr Pro Pro  
           65                          70                          75                          80  
 His Gln Cys Cys Trp Ser Glu His Thr His Val Val Ser Thr Thr Pro  
                           85                          90                          95  
 Leu Leu Pro Ala Tyr Met His Met Ser Met Asp Pro Ala Ala Thr Thr  
                           100                          105                          110  
 Gln Met Lys Cys Phe Cys Arg His Pro Ile Arg Ala Phe Leu Pro Val  
           115                          120                          125  
 Glu Trp Glu His Leu Ser Pro Phe Asn Thr Ala Xaa Ala  
           130                          135                          140

&lt;210&gt; 1555

&lt;211&gt; 141

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1555

Met Gly Pro Arg Gly Cys Ala Leu Ala His Ser Leu Leu Pro Leu Leu  
   1                          5                          10                          15  
 Cys Gln His Val Trp Thr Ser Pro Arg Tyr Cys Arg Gln Cys Thr Arg  
                           20                          25                          30  
 Glu Pro Arg His Cys Cys Pro Ala Pro Ala Ser Ala Gly Val Gln Tyr  
           35                          40                          45  
 Met Cys Ala Tyr Gly Cys His His Pro Thr Phe Ala Gly Val Tyr Thr  
           50                          55                          60  
 Pro Ser His Thr Thr Val Ala Thr Ser Ile Cys Thr Gln Thr Pro Pro  
           65                          70                          75                          80  
 His Gln Cys Cys Trp Ser Glu His Thr His Val Val Ser Thr Thr Pro  
                           85                          90                          95  
 Leu Leu Pro Ala Tyr Met His Met Ser Met Asp Pro Ala Ala Thr Thr  
                           100                          105                          110  
 Gln Met Lys Cys Phe Cys Arg His Pro Ile Arg Ala Phe Leu Pro Val  
           115                          120                          125  
 Glu Trp Glu His Leu Ser Pro Ser Asn Thr Ala Gly Ala  
           130                          135                          140

&lt;210&gt; 1556

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1556

Met Ile Val Asn Ile Ser His Glu Ile Trp Trp Phe Tyr Lys Gly Lys  
 1 5 10 15

Val Pro Leu His Met Leu Thr Cys Leu Leu Pro Cys Lys Thr Cys Leu  
 20 25 30

Ala Pro Pro Ser Pro Ser Ser Val Thr Val Arg Pro Pro Gln Pro Cys  
 35 40 45

Glu Thr Val Ser Pro Leu Lys Leu Phe Phe Phe Ile Asn Tyr Pro Val  
 50 55 60

Leu His Met Ser Leu Leu Thr Val Arg Lys Trp Thr Asn Thr Leu Gly  
 65 70 75 80

His Glu Gly Gly Ala Leu Ile Asn Gly Ile Ser Ala Leu  
 85 90

&lt;210&gt; 1557

&lt;211&gt; 59

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1557

Glu Glu His Gly Ile Thr Ser Val Ile Phe Leu Pro Gln Val His Asn  
 1 5 10 15

Leu Asn Leu Ile Ile Arg Lys His Gln Thr Asn Pro Asn Gln Glu Thr  
 20 25 30

Leu Tyr Lys Ile Met Thr Cys Asp Pro Gln Asn Leu Gln Gly His Glu  
 35 40 45

Gln Gln Gly Lys Thr Glu Asp Lys Cys Thr Val  
 50 55

&lt;210&gt; 1558

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1558

Met Ile Val Asn Ile Ser His Glu Ile Trp Trp Phe Tyr Lys Gly Lys  
 1 5 10 15

Val Pro Leu His Met Leu Thr Cys Leu Leu Pro Cys Lys Thr Cys Leu  
 20 25 30

Ala Pro Pro Ser Pro Ser Ser Val Thr Val Arg Pro Pro Gln Pro Cys  
 35 40 45

Glu Thr Val Ser Pro Leu Lys Leu Phe Phe Phe Ile Asn Tyr Pro Val



50                      55                      60  
 Leu His Met Ser Leu Leu Thr Val Arg Lys Trp Thr Asn Thr Leu Gly  
 65                      70                      75                      80  
 His Glu Gly Gly Ala Leu Ile Asn Gly Ile Ser Ala Leu  
                          85                      90

<210> 1559  
 <211> 100  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (62)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (85)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (88)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (95)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (99)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1559  
 Met Leu Leu Gln Arg Thr Arg Phe Leu Leu Leu Phe Phe Ser Phe Val  
 1                      5                      10                      15

Ser Ser Phe Phe Leu Ser Leu Pro Ser Phe Ser Leu Phe Phe Leu Phe  
                          20                      25                      30

Leu Ser Leu Ser Leu Phe Cys Ile His Val Ala Ala Lys Asp Met Ile  
 35                      40                      45

Ser Ser Phe Phe Ser Leu Pro Phe Ser Phe Leu Ser Phe Xaa Leu Ser  
 50                      55                      60

Phe Leu Leu Pro Ser Phe Ser Phe Phe Tyr Phe Phe Phe Phe Trp Leu  
 65                      70                      75                      80

Ser Phe Phe Phe Xaa Ser Lys Xaa Leu Ala Leu Val Pro Lys Xaa Gly  
                          85                      90                      95

Met Gln Xaa Val

100

&lt;210&gt; 1560

&lt;211&gt; 87

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (71)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (86)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1560

Met	Val	Val	Met	Ala	Ser	Leu	Gln	Val	Glu	Pro	Ala	Val	Gly	Lys	Glu
1				5					10					15	

Gln	Leu	Arg	Glu	Arg	Gln	Gly	Pro	Glu	Leu	Leu	Gly	Trp	Val	Ala	Gly
		20						25					30		

Leu	Ala	Phe	Val	Cys	Leu	Phe	Ala	Cys	Val	Gly	Val	Gly	Val	Ala	Pro
		35					40					45			

Cys	His	Ser	Phe	Asp	Ser	Glu	Ala	Ala	Ser	Phe	Leu	Leu	Leu	Tyr	Ser
	50					55					60				

Trp	Cys	Thr	Pro	Arg	Leu	Xaa	Ser	Trp	Leu	Arg	Asp	Thr	Pro	Ser	Pro
65					70					75					80

Leu	Ala	Ser	Gly	Thr	Xaa	Pro
				85		

&lt;210&gt; 1561

&lt;211&gt; 49

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1561

Val	Arg	Ala	Met	Phe	Gly	Phe	Leu	Ala	Cys	Val	Ser	Ser	Leu	Arg	Val
1				5					10					15	

Met	Ala	Ser	Ser	Ser	Ser	His	Val	Thr	Ser	Glu	Asp	Met	Ile	Leu	Phe
		20						25					30		

Leu	Ile	Ser	Cys	Gly	Ile	Tyr	Val	Pro	His	Phe	Leu	Tyr	Pro	Val	Asp
		35					40					45			

Arg

<210> 1562  
 <211> 168  
 <212> PRT  
 <213> Homo sapiens

<400> 1562  
 Met Val Val Met Ala Ser Leu Gln Val Glu Pro Ala Val Gly Lys Glu  
           1                  5                  10                  15  
 Gln Leu Arg Glu Arg Gln Gly Pro Glu Leu Leu Gly Trp Val Ala Gly  
                   20                  25                  30  
 Leu Ala Phe Val Cys Leu Phe Ala Cys Val Gly Val Gly Val Ala Pro  
           35                  40                  45  
 Cys His Ser Phe Asp Ser Glu Ala Ala Ser Phe Leu Leu Leu Tyr Ser  
           50                  55                  60  
 Trp Cys Thr Pro Arg Leu Leu Ser Trp Leu Arg Asp Thr Pro Ser Pro  
           65                  70                  75                  80  
 Leu Ala Ser Gly Thr Phe Pro Pro His Ser Pro Leu Gly Glu Arg Pro  
                   85                  90                  95  
 Leu Leu Ser Gly Pro Pro Ser Ser Ser Gln Gln Leu Leu Val Val Gly  
                   100                  105                  110  
 Pro Cys Ala Leu Arg Phe Val Gly Ala Arg His Val Lys Thr Ala Gly  
           115                  120                  125  
 Phe Arg Asp Gly Phe Ser Leu Pro Ser Ser Ser Val Phe Ser Glu Phe  
           130                  135                  140  
 Trp Lys Met Thr Leu Leu Glu Ala Pro Leu Leu Cys His Leu Ser Ser  
           145                  150                  155                  160  
 Lys Ser Gly Ala Ser Ala Cys Trp  
                   165

<210> 1563  
 <211> 200  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (140)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (155)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (165)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (173)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (194)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (196)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1563

Met	Ala	Val	Tyr	Val	Gly	Met	Leu	Arg	Leu	Gly	Arg	Leu	Cys	Ala	Gly
1				5					10					15	
Ser	Ser	Gly	Val	Leu	Gly	Ala	Arg	Ala	Ala	Leu	Ser	Arg	Ser	Trp	Gln
		20					25						30		
Glu	Ala	Arg	Leu	Gln	Gly	Val	Arg	Phe	Leu	Ser	Ser	Arg	Glu	Val	Asp
		35					40					45			
Arg	Met	Val	Ser	Thr	Pro	Ile	Gly	Gly	Leu	Ser	Tyr	Val	Gln	Gly	Cys
	50					55					60				
Thr	Lys	Lys	His	Leu	Asn	Ser	Lys	Thr	Val	Gly	Gln	Cys	Leu	Glu	Thr
65					70					75					80
Thr	Ala	Gln	Arg	Val	Pro	Glu	Arg	Glu	Ala	Leu	Val	Val	Leu	His	Glu
				85					90					95	
Asp	Val	Arg	Leu	Thr	Phe	Ala	Gln	Leu	Lys	Glu	Glu	Val	Asp	Lys	Ala
			100					105					110		
Ala	Ser	Gly	Leu	Leu	Ser	Ile	Gly	Leu	Cys	Lys	Gly	Asp	Arg	Leu	Gly
		115					120					125			
Met	Trp	Gly	Pro	Asn	Ser	Tyr	Ala	Trp	Val	Leu	Xaa	Gln	Leu	Ala	Thr
		130				135					140				
Gly	Gln	Ala	Gly	Ile	Ile	Leu	Val	Ser	Val	Xaa	Pro	Ala	Tyr	Gln	Ala
145					150					155					160
Met	Glu	Trp	Ser	Xaa	Ser	Ser	Lys	Lys	Trp	Ala	Ser	Xaa	Ala	Leu	Val
				165					170					175	
Val	Pro	Lys	Gln	Phe	Lys	Thr	Lys	His	Asn	Thr	Thr	Phe	Leu	Lys	Gln
			180					185					190		
Ile	Xaa	Pro	Xaa	Trp	Arg	Met	Pro								
		195				200									

<210> 1564  
 <211> 100

<212> PRT  
 <213> Homo sapiens  
  
 <220>  
 <221> SITE  
 <222> (3)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (12)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (57)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (62)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (80)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1564  
 Met Ala Xaa Tyr Val Gly Met Leu Arg Leu Gly Xaa Leu Cys Ala Gly  
   1                  5                  10                  15  
  
 Ser Ser Gly Val Leu Gly Ala Arg Ala Ala Leu Ser Arg Ser Trp Gln  
           20                  25                  30  
  
 Glu Ala Arg Leu Gln Gly Val Arg Phe Leu Ser Ser Arg Glu Val Gly  
           35                  40                  45  
  
 Ser His Gly Leu His Ala His Arg Xaa Ala Ser Ala Thr Xaa Arg Gly  
   50                  55                  60  
  
 Ala Pro Lys Ser Ile Leu Thr Ala Arg Leu Trp Ala Ser Ala Trp Xaa  
   65                  70                  75                  80  
  
 Pro Gln His Arg Gly Ser Gln Asn Glu Arg Pro Trp Ser Ser Ser Met  
           85                  90                  95  
  
 Lys Thr Ser Gly  
           100

<210> 1565  
 <211> 461  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (424)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (459)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1565

Met Ala Val Tyr Val Gly Met Leu Arg Leu Gly Arg Leu Cys Ala Gly  
1 5 10 15

Ser Ser Gly Val Leu Gly Ala Arg Ala Ala Leu Ser Arg Ser Trp Gln  
20 25 30

Glu Ala Arg Leu Gln Gly Val Arg Phe Leu Ser Ser Arg Glu Val Asp  
35 40 45

Arg Met Val Ser Thr Pro Ile Gly Gly Leu Ser Tyr Val Gln Gly Cys  
50 55 60

Thr Lys Lys His Leu Asn Ser Lys Thr Val Gly Gln Cys Leu Glu Thr  
65 70 75 80

Thr Ala Gln Arg Val Pro Glu Arg Glu Ala Leu Val Val Leu His Glu  
85 90 95

Asp Val Arg Leu Thr Phe Ala Gln Leu Lys Glu Glu Val Asp Lys Ala  
100 105 110

Ala Ser Gly Leu Leu Ser Ile Gly Leu Cys Lys Gly Asp Arg Leu Gly  
115 120 125

Met Trp Gly Pro Asn Ser Tyr Ala Trp Val Leu Met Gln Leu Ala Thr  
130 135 140

Ala Gln Ala Gly Ile Ile Leu Val Ser Val Asn Pro Ala Tyr Gln Ala  
145 150 155 160

Met Glu Leu Glu Tyr Val Leu Lys Lys Val Gly Cys Lys Ala Leu Val  
165 170 175

Phe Pro Lys Gln Phe Lys Thr Gln Gln Tyr Tyr Asn Val Leu Lys Gln  
180 185 190

Ile Cys Pro Glu Val Glu Asn Ala Gln Pro Gly Ala Leu Lys Ser Gln  
195 200 205

Arg Leu Pro Asp Leu Thr Thr Val Ile Ser Val Asp Ala Pro Leu Pro  
210 215 220

Gly Thr Leu Leu Leu Asp Glu Val Val Ala Ala Gly Ser Thr Arg Gln  
225 230 235 240

His Leu Asp Gln Leu Gln Tyr Asn Gln Gln Phe Leu Ser Cys His Asp  
245 250 255

Pro Ile Asn Ile Gln Phe Thr Ser Gly Thr Thr Gly Ser Pro Lys Gly  
260 265 270

Ala Thr Leu Ser His Tyr Asn Ile Val Asn Asn Ser Asn Ile Leu Gly

275		280		285
Glu Arg Leu Lys Leu His Glu Lys Thr Pro Glu Gln Leu Arg Met Ile				
290		295		300
Leu Pro Asn Pro Leu Tyr His Cys Leu Gly Ser Val Ala Gly Thr Met				
305		310		315
Met Cys Leu Met Tyr Gly Ala Thr Leu Ile Leu Ala Ser Pro Ile Phe				
		325		330
Asn Gly Lys Lys Ala Leu Glu Ala Ile Ser Arg Glu Arg Gly Thr Phe				
		340		345
Leu Tyr Gly Thr Pro Thr Met Phe Val Asp Ile Leu Asn Gln Pro Asp				
		355		360
Phe Ser Ser Tyr Asp Ile Ser Thr Met Cys Gly Gly Val Ile Ala Gly				
		370		375
Ser Pro Ala Pro Pro Glu Leu Ile Arg Ala Ile Ile Asn Lys Ile Asn				
385		390		395
Met Lys Asp Leu Val Val Ala Tyr Gly Thr Thr Glu Asn Ser Pro Val				
		405		410
Thr Phe Ala His Phe Pro Glu Xaa Thr Pro Lys Pro Leu Asp Lys Glu				
		420		425
Lys Arg Ala Glu Tyr Ala Ser His Gly Gly Glu Pro Leu Thr Lys Thr				
		435		440
Ser Lys Ser His Leu Pro Ser Pro Ser Trp Xaa Gly Ser				
		450		455
				460

&lt;210&gt; 1566

&lt;211&gt; 177

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (121)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (122)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1566

Met Lys Val Leu Ala Thr Ser Phe Val Leu Gly Ser Leu Gly Leu Ala
1 5 10 15

Phe Tyr Leu Pro Leu Val Val Thr Thr Pro Lys Thr Leu Ala Ile Pro
20 25 30

Glu Lys Leu Gln Glu Ala Val Gly Lys Val Ile Ile Asn Ala Thr Thr
---

35 40 45  
 Cys Thr Val Thr Cys Gly Leu Gly Tyr Lys Glu Glu Thr Val Cys Glu  
 50 55 60  
 Val Gly Pro Asp Gly Val Arg Arg Lys Cys Gln Thr Arg Arg Leu Glu  
 65 70 75 80  
 Cys Leu Thr Asn Trp Ile Cys Gly Met Leu His Phe Thr Ile Leu Ile  
 85 90 95  
 Gly Lys Glu Phe Glu Leu Ser Cys Leu Ser Ser Asp Ile Leu Glu Phe  
 100 105 110  
 Gly Gln Glu Ala Phe Arg Phe Thr Xaa Xaa Leu Ala Arg Gly Val Ile  
 115 120 125  
 Ser Thr Asp Asp Glu Val Phe Lys Pro Phe Gln Ala Asn Ser His Phe  
 130 135 140  
 Val Lys Phe Lys Tyr Ala Gln Glu Tyr Asp Ser Gly Thr Tyr Arg Cys  
 145 150 155 160  
 Asp Val Gln Leu Val Lys Asn Leu Arg Leu Val Lys Ser Ser Ile Leu  
 165 170 175  
 Gly

&lt;210&gt; 1567

&lt;211&gt; 255

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1567

Met Lys Val Leu Ala Thr Ser Phe Val Leu Gly Ser Leu Gly Leu Ala  
 1 5 10 15  
 Phe Tyr Leu Pro Leu Val Val Thr Thr Pro Lys Thr Leu Ala Ile Pro  
 20 25 30  
 Glu Lys Leu Gln Glu Ala Val Gly Lys Val Ile Ile Asn Ala Thr Thr  
 35 40 45  
 Cys Thr Val Thr Cys Gly Leu Gly Tyr Lys Glu Glu Thr Val Cys Glu  
 50 55 60  
 Val Gly Pro Asp Gly Val Arg Arg Lys Cys Gln Thr Gln Arg Leu Glu  
 65 70 75 80  
 Cys Leu Thr Asn Trp Ile Cys Gly Met Leu His Phe Thr Ile Leu Ile  
 85 90 95  
 Gly Lys Glu Phe Glu Leu Ser Cys Leu Ser Ser Asp Ile Leu Glu Phe  
 100 105 110  
 Gly Gln Glu Ala Phe Arg Phe Thr Trp Arg Leu Ala Arg Gly Val Ile  
 115 120 125



Ser Thr Asp Asp Glu Val Phe Lys Pro Phe Gln Ala Asn Ser His Phe  
 130 135 140

Val Lys Phe Lys Tyr Ala Gln Glu Tyr Asp Ser Gly Thr Tyr Arg Cys  
 145 150 155 160

Asp Val Gln Leu Val Lys Asn Leu Arg Leu Val Lys Arg Leu Tyr Phe  
 165 170 175

Gly Leu Arg Val Leu Pro Pro Asn Leu Val Asn Leu Asn Phe His Gln  
 180 185 190

Ser Leu Thr Glu Asp Gln Lys Leu Ile Asp Glu Gly Leu Glu Val Asn  
 195 200 205

Leu Asp Ser Tyr Ser Lys Pro His His Pro Lys Trp Lys Lys Lys Val  
 210 215 220

Ala Ser Ala Leu Gly Ile Gly Ile Ala Ile Gly Val Val Gly Gly Val  
 225 230 235 240

Leu Val Arg Ile Val Leu Cys Ala Leu Arg Gly Gly Leu Gln Gln  
 245 250 255

<210> 1568  
 <211> 255  
 <212> PRT  
 <213> Homo sapiens

<400> 1568  
 Met Lys Val Leu Ala Thr Ser Phe Val Leu Gly Ser Leu Gly Leu Ala  
 1 5 10 15

Phe Tyr Leu Pro Leu Val Val Thr Thr Pro Lys Thr Leu Ala Ile Pro  
 20 25 30

Glu Lys Leu Gln Glu Ala Val Gly Lys Val Ile Ile Asn Ala Thr Thr  
 35 40 45

Cys Thr Val Thr Cys Gly Leu Gly Tyr Lys Glu Glu Thr Val Cys Glu  
 50 55 60

Val Gly Pro Asp Gly Val Arg Arg Lys Cys Gln Thr Arg Arg Leu Glu  
 65 70 75 80

Cys Leu Thr Asn Trp Ile Cys Gly Met Leu His Phe Thr Ile Leu Ile  
 85 90 95

Gly Lys Glu Phe Glu Leu Ser Cys Leu Ser Ser Asp Ile Leu Glu Phe  
 100 105 110

Gly Gln Glu Ala Phe Arg Phe Thr Trp Arg Leu Ala Arg Gly Val Ile  
 115 120 125

Ser Thr Asp Asp Glu Val Phe Lys Pro Phe Gln Ala Asn Ser His Phe  
 130 135 140

Val Lys Phe Lys Tyr Ala Gln Glu Tyr Asp Ser Gly Thr Tyr Arg Cys  
 145 150 155 160

Asp Val Gln Leu Val Lys Asn Leu Arg Leu Val Lys Arg Leu Tyr Phe  
 165 170 175

Gly Leu Arg Val Leu Pro Pro Asn Leu Val Asn Leu Asn Phe His Gln  
 180 185 190

Ser Leu Thr Glu Asp Gln Lys Leu Ile Asp Glu Gly Leu Glu Val Asn  
 195 200 205

Leu Asp Ser Tyr Ser Lys Pro His His Pro Lys Trp Lys Lys Lys Val  
 210 215 220

Ala Ser Ala Leu Gly Ile Gly Ile Ala Ile Gly Val Val Gly Gly Val  
 225 230 235 240

Leu Val Arg Ile Val Leu Cys Ala Leu Arg Gly Gly Leu Gln Gln  
 245 250 255

&lt;210&gt; 1569

&lt;211&gt; 52

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (46)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1569

Met Val Pro Ile Phe Leu Leu Lys Cys Leu Leu Leu His Val Pro Leu  
 1 5 10 15

Cys Met Ser Ser Asn Leu Ser Phe His Ser Ser His His Leu His Ile  
 20 25 30

Phe Leu Pro Ser Phe Ser Ser His Leu Pro Arg Pro Leu Xaa Ile Pro  
 35 40 45

Pro Leu Ser Pro  
 50

&lt;210&gt; 1570

&lt;211&gt; 1134

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1570

Val Leu Phe Arg Pro Gln Ala Gln Arg Pro Pro Ser Cys Val Gly Gly  
 1 5 10 15

Ser Ala Val Arg Arg Trp Gln Gly Gln Pro Gln Pro Gln Arg Pro Gly  
 20 25 30

Glu	Glu	Lys	Ala	Ala	Ala	Ala	Ile	Leu	Gly	Gly	Pro	Gly	Gly	Gly	Glu
		35					40					45			
Glu	Glu	Lys	Glu	Glu	Gly	Gly	Gly	Arg	Ala	Trp	Leu	Arg	Leu	Leu	Glu
	50					55					60				
Glu	Leu	Ala	Ala	Ala	Arg	Pro	Gly	Glu	Pro	Ala	Leu	Met	Ser	Ser	Ser
65					70					75					80
Pro	Leu	Ser	Lys	Lys	Arg	Arg	Val	Ser	Gly	Pro	Asp	Pro	Lys	Pro	Gly
				85					90					95	
Ser	Asn	Cys	Ser	Pro	Ala	Gln	Ser	Val	Leu	Ser	Glu	Val	Pro	Ser	Val
			100					105					110		
Pro	Thr	Asn	Gly	Met	Ala	Lys	Asn	Gly	Ser	Glu	Ala	Asp	Ile	Asp	Glu
		115					120					125			
Gly	Leu	Tyr	Ser	Arg	Gln	Leu	Tyr	Val	Leu	Gly	His	Glu	Ala	Met	Lys
	130					135					140				
Arg	Leu	Gln	Thr	Ser	Ser	Val	Leu	Val	Ser	Gly	Leu	Arg	Gly	Leu	Gly
145					150					155					160
Val	Glu	Ile	Ala	Lys	Asn	Ile	Ile	Leu	Gly	Gly	Val	Lys	Ala	Val	Thr
				165					170					175	
Leu	His	Asp	Gln	Gly	Thr	Ala	Gln	Trp	Ala	Asp	Leu	Ser	Ser	Gln	Phe
			180					185					190		
Tyr	Leu	Arg	Glu	Glu	Asp	Ile	Gly	Lys	Asn	Arg	Ala	Glu	Val	Ser	Gln
		195					200					205			
Pro	Arg	Leu	Ala	Glu	Leu	Asn	Ser	Tyr	Val	Pro	Val	Thr	Ala	Tyr	Thr
	210					215					220				
Gly	Pro	Leu	Val	Glu	Asp	Phe	Leu	Ser	Gly	Phe	Gln	Val	Val	Val	Leu
225					230					235					240
Thr	Asn	Thr	Pro	Leu	Glu	Asp	Gln	Leu	Arg	Val	Gly	Glu	Phe	Cys	His
				245					250					255	
Asn	Arg	Gly	Ile	Lys	Leu	Val	Val	Ala	Asp	Thr	Arg	Gly	Leu	Phe	Gly
			260					265					270		
Gln	Leu	Phe	Cys	Asp	Phe	Gly	Glu	Glu	Met	Ile	Leu	Thr	Asp	Ser	Asn
		275					280					285			
Gly	Glu	Gln	Pro	Leu	Ser	Ala	Met	Val	Ser	Met	Val	Thr	Lys	Asp	Asn
	290					295					300				
Pro	Gly	Val	Val	Thr	Cys	Leu	Asp	Glu	Ala	Arg	His	Gly	Phe	Glu	Ser
305					310					315					320
Gly	Asp	Phe	Val	Ser	Phe	Ser	Glu	Val	Gln	Gly	Met	Val	Glu	Leu	Asn
				325					330					335	
Gly	Asn	Gln	Pro	Met	Glu	Ile	Lys	Val	Leu	Gly	Pro	Tyr	Thr	Phe	Ser
			340				345						350		

Ile Cys Asp Thr Ser Asn Phe Ser Asp Tyr Ile Arg Gly Gly Ile Val  
 355 360 365  
 Ser Gln Val Lys Val Pro Lys Lys Ile Ser Phe Lys Ser Leu Val Ala  
 370 375 380  
 Ser Leu Ala Glu Pro Asp Phe Val Val Thr Asp Phe Ala Lys Phe Ser  
 385 390 395 400  
 Arg Pro Ala Gln Leu His Ile Gly Phe Gln Ala Leu His Gln Phe Cys  
 405 410 415  
 Ala Gln His Gly Arg Pro Pro Arg Pro Arg Asn Glu Glu Asp Ala Ala  
 420 425 430  
 Glu Leu Val Ala Leu Ala Gln Ala Val Asn Ala Arg Ala Leu Pro Ala  
 435 440 445  
 Val Gln Gln Asn Asn Leu Asp Glu Asp Leu Ile Arg Lys Leu Ala Tyr  
 450 455 460  
 Val Ala Ala Gly Asp Leu Ala Pro Ile Asn Ala Phe Ile Gly Gly Leu  
 465 470 475 480  
 Ala Ala Gln Glu Val Met Lys Ala Cys Ser Gly Lys Phe Met Pro Ile  
 485 490 495  
 Met Gln Trp Leu Tyr Phe Asp Ala Leu Glu Cys Leu Pro Glu Asp Lys  
 500 505 510  
 Glu Val Leu Thr Glu Asp Lys Cys Leu Gln Arg Gln Asn Arg Tyr Asp  
 515 520 525  
 Gly Gln Val Ala Val Phe Gly Ser Asp Leu Gln Glu Lys Leu Gly Lys  
 530 535 540  
 Gln Lys Tyr Phe Leu Val Gly Ala Gly Ala Ile Gly Cys Glu Leu Leu  
 545 550 555 560  
 Lys Asn Phe Ala Met Ile Gly Leu Gly Cys Gly Glu Gly Gly Glu Ile  
 565 570 575  
 Ile Val Thr Asp Met Asp Thr Ile Glu Lys Ser Asn Leu Asn Arg Gln  
 580 585 590  
 Phe Leu Phe Arg Pro Trp Asp Val Thr Lys Leu Lys Ser Asp Thr Ala  
 595 600 605  
 Ala Ala Ala Val Arg Gln Met Asn Pro His Ile Arg Val Thr Ser His  
 610 615 620  
 Gln Asn Arg Val Gly Pro Asp Thr Glu Arg Ile Tyr Asp Asp Asp Phe  
 625 630 635 640  
 Phe Gln Asn Leu Asp Gly Val Ala Asn Ala Leu Asp Asn Val Asp Ala  
 645 650 655  
 Arg Met Tyr Met Asp Arg Arg Cys Val Tyr Tyr Arg Lys Pro Leu Leu  
 660 665 670

Glu Ser Gly Thr Leu Gly Thr Lys Gly Asn Val Gln Val Val Ile Pro  
 675 680 685  
 Phe Leu Thr Glu Ser Tyr Ser Ser Ser Gln Asp Pro Pro Glu Lys Ser  
 690 695 700  
 Ile Pro Ile Cys Thr Leu Lys Asn Phe Pro Asn Ala Ile Glu His Thr  
 705 710 715 720  
 Leu Gln Trp Ala Arg Asp Glu Phe Glu Gly Leu Phe Lys Gln Pro Ala  
 725 730 735  
 Glu Asn Val Asn Gln Tyr Leu Thr Asp Pro Lys Phe Val Glu Arg Thr  
 740 745 750  
 Leu Arg Leu Ala Gly Thr Gln Pro Leu Glu Val Leu Glu Ala Val Gln  
 755 760 765  
 Arg Ser Leu Val Leu Gln Arg Pro Gln Thr Trp Ala Asp Cys Val Thr  
 770 775 780  
 Trp Ala Cys His His Trp His Thr Gln Tyr Ser Asn Asn Ile Arg Gln  
 785 790 795 800  
 Leu Leu His Asn Phe Pro Pro Asp Gln Leu Thr Ser Ser Gly Ala Pro  
 805 810 815  
 Phe Trp Ser Gly Pro Lys Arg Cys Pro His Pro Leu Thr Phe Asp Val  
 820 825 830  
 Asn Asn Pro Leu His Leu Asp Tyr Val Met Ala Ala Ala Asn Leu Phe  
 835 840 845  
 Ala Gln Thr Tyr Gly Leu Thr Gly Ser Gln Asp Arg Ala Ala Val Ala  
 850 855 860  
 Thr Phe Leu Gln Ser Val Gln Val Pro Glu Phe Thr Pro Lys Ser Gly  
 865 870 875 880  
 Val Lys Ile His Val Ser Asp Gln Glu Leu Gln Ser Ala Asn Ala Ser  
 885 890 895  
 Val Asp Asp Ser Arg Leu Glu Glu Leu Lys Ala Thr Leu Pro Ser Pro  
 900 905 910  
 Asp Lys Leu Pro Gly Phe Lys Met Tyr Pro Ile Asp Phe Glu Lys Asp  
 915 920 925  
 Asp Asp Ser Asn Phe His Met Asp Phe Ile Val Ala Ala Ser Asn Leu  
 930 935 940  
 Arg Ala Glu Asn Tyr Asp Ile Pro Ser Ala Asp Arg His Lys Ser Lys  
 945 950 955 960  
 Leu Ile Ala Gly Lys Ile Ile Pro Ala Ile Ala Thr Thr Thr Ala Ala  
 965 970 975  
 Val Val Gly Leu Val Cys Leu Glu Leu Tyr Lys Val Val Gln Gly His  
 980 985 990

Arg Gln Leu Asp Ser Tyr Lys Asn Gly Phe Leu Asn Leu Ala Leu Pro  
 995 1000 1005

Phe Phe Gly Phe Ser Glu Pro Leu Ala Ala Pro Arg His Gln Tyr Tyr  
 1010 1015 1020

Asn Gln Glu Trp Thr Leu Trp Asp Arg Phe Glu Val Gln Gly Leu Gln  
 1025 1030 1035 1040

Pro Asn Gly Glu Glu Met Thr Leu Lys Gln Phe Leu Asp Tyr Phe Lys  
 1045 1050 1055

Thr Glu His Lys Leu Glu Ile Thr Met Leu Ser Gln Gly Val Ser Met  
 1060 1065 1070

Leu Tyr Ser Phe Phe Met Pro Ala Ala Lys Leu Lys Glu Arg Leu Asp  
 1075 1080 1085

Gln Pro Met Thr Glu Ile Val Ser Arg Val Ser Lys Arg Lys Leu Gly  
 1090 1095 1100

Arg His Val Arg Ala Leu Val Leu Glu Leu Cys Cys Asn Asp Glu Ser  
 1105 1110 1115 1120

Gly Glu Asp Val Glu Val Pro Tyr Val Arg Tyr Thr Ile Arg  
 1125 1130

&lt;210&gt; 1571

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1571

Met Val Pro Ile Phe Leu Leu Lys Cys Leu Leu Leu His Val Pro Leu  
 1 5 10 15

Cys Met Ser Ser Asn Leu Ser Phe His Ser Ser His His Leu His Ile  
 20 25 30

Phe Leu Pro Ser Phe Ser Ser His Leu Pro Arg Pro Leu Tyr Ile Pro  
 35 40 45

Pro Leu Ser Pro Phe Tyr Ile Phe Ser Ile Ser Pro His Ile Phe Pro  
 50 55 60

Leu Cys Pro His Leu Cys Ile Pro Pro Asn Phe Pro Ser Ile Tyr Leu  
 65 70 75 80

Phe Tyr Ser Pro Phe Pro Pro Cys Ile Leu Cys Val Pro Pro Ile Leu  
 85 90 95

Leu Tyr Ile Ile Leu Pro Lys Ile Phe Thr Ser Pro Ile Leu Ile Ser  
 100 105 110

Pro Ser Pro Leu Ser Pro Asn Ile Phe Ile Ser Val Pro  
 115 120 125

<210> 1572  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 1572

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Met Val Pro Ile Phe Leu Leu Lys Cys Leu Leu Leu His Val Pro Leu
  1              5              10              15

Cys Met Ser Ser Asn Leu Ser Phe His Ser Ser His His Leu His Ile
          20              25              30

Phe Leu Pro Ser Phe Ser Ser His Leu Pro Arg Pro Leu Tyr Ile Pro
          35              40              45

Pro Leu Ser Pro Phe Tyr Ile Phe Ser Ile Ser Pro His Ile Phe Pro
          50              55              60

Leu Cys Pro His Leu Cys Ile Pro Pro Asn Phe Pro Ser Ile Tyr Leu
          65              70              75              80

Phe Tyr Ser Pro Phe Pro Pro Cys Ile Leu Cys Val Pro Pro Ile Leu
          85              90              95

Leu Tyr Ile Ile Leu Pro Lys Ile Phe Thr Ser Pro Ile Leu Ile Ser
          100              105              110

Pro Ser Pro Leu Ser Pro Asn Ile Phe Ile Ser Val Pro
          115              120              125

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<210> 1573  
 <211> 124  
 <212> PRT  
 <213> Homo sapiens

<220>

<221> SITE

<222> (63)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (86)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1573

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Met Val Val Ala Val Leu Leu Gly Phe Val Ala Met Val Leu Ser Val
  1              5              10              15

Val Gly Met Lys Cys Thr Arg Val Gly Asp Ser Asn Pro Ile Ala Lys
          20              25              30

Gly Arg Val Ala Ile Ala Gly Gly Ala Leu Phe Ile Leu Ala Gly Leu
          35              40              45

Cys Thr Leu Thr Ala Val Ser Trp Tyr Ala Thr Leu Val Thr Xaa Glu
          50              55              60

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Phe Phe Asn Pro Ser Thr Pro Val Asn Ala Arg Tyr Glu Phe Gly Pro  
 65 70 75 80  
 Ala Leu Phe Val Gly Xaa Asp Ser Ala Gly Leu Ala Val Leu Ser Gly  
 85 90 95  
 Ser Phe Leu Cys Cys Thr Cys Pro Glu Pro Glu Arg Pro Asn Ser Ser  
 100 105 110  
 Pro Gln Ala Leu Ser Ala Trp Thr Leu Cys Cys Cys  
 115 120

<210> 1574  
 <211> 97  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (49)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1574  
 Asn Ser Ala Arg Asp Gln Ala Ser Gly Glu Ser Ile His His Arg Thr  
 1 5 10 15  
 Ser Pro Ser Leu Pro Arg Thr Phe Leu Gly Gln Leu His Ser Gly Leu  
 20 25 30  
 Leu His His Leu Pro Cys Asp His Ile Ser His His Val Pro Arg Ser  
 35 40 45  
 Xaa Glu Arg Ser Ser Ala Ser Pro Ser Ser Leu Thr Leu Arg Gly Lys  
 50 55 60  
 Val Thr Glu Thr Lys Ser Asp Glu Met Thr Ala Met Tyr Thr Ala Val  
 65 70 75 80  
 Lys Gly Arg Glu Gly Arg Asn Asp Thr Asn Gly Arg Glu Leu Leu Gly  
 85 90 95

Asn

<210> 1575  
 <211> 128  
 <212> PRT  
 <213> Homo sapiens

<400> 1575  
 Met Val Val Ala Val Leu Leu Gly Phe Val Ala Met Val Leu Ser Val  
 1 5 10 15  
 Val Gly Met Lys Cys Thr Arg Val Gly Asp Ser Asn Pro Ile Ala Lys  
 20 25 30



Gly Arg Val Ala Ile Ala Gly Gly Ala Leu Phe Ile Leu Ala Gly Leu  
           35                                  40                                  45  
 Cys Thr Leu Thr Ala Val Ser Trp Tyr Ala Thr Leu Val Thr Gln Glu  
           50                                  55                                  60  
 Phe Phe Asn Pro Ser Thr Pro Val Asn Ala Arg Tyr Glu Phe Gly Pro  
           65                                  70                                  75                                  80  
 Ala Leu Phe Val Gly Trp Ala Ser Ala Gly Leu Ala Val Leu Gly Gly  
                                   85                                  90                                  95  
 Ser Phe Leu Cys Cys Thr Cys Pro Glu Pro Glu Arg Pro Asn Ser Ser  
                                   100                                  105                                  110  
 Pro Gln Pro Tyr Arg Pro Gly Pro Ser Ala Ala Ala Arg Glu Tyr Val  
           115                                  120                                  125

<210> 1576  
 <211> 100  
 <212> PRT  
 <213> Homo sapiens.

<400> 1576  
 Met Val Arg Thr Arg Ala Leu Phe Tyr Ile Phe Phe Gln Leu Ser Leu  
       1                                  5                                  10                                  15  
 Thr Ser Gly Leu Ile Glu Asp Ser Cys Ile Leu Ile Ile Ile Tyr Leu  
           20                                  25                                  30  
 Phe Phe Phe Arg Trp Cys Leu Ala Leu Ser Pro Met Leu Glu Cys Ser  
           35                                  40                                  45  
 Gly Val Thr Leu Ala His Cys Asn His His Leu Leu Gly Arg Leu Arg  
           50                                  55                                  60  
 Gln Glu Asn Arg Leu Asn Leu Gly Gly Gly Asp Cys Ser Glu Leu Arg  
           65                                  70                                  75                                  80  
 Leu His His Cys Thr Leu Ala Cys Val Thr Ser Lys Thr Leu Ser His  
                                   85                                  90                                  95  
 Thr His Thr Lys  
           100

<210> 1577  
 <211> 100  
 <212> PRT  
 <213> Homo sapiens

<400> 1577  
 Met Val Arg Thr Arg Ala Leu Phe Tyr Ile Phe Phe Gln Leu Ser Leu

[illegible]

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<210> 1578
<211> 118
<212> PRT
<213> Homo sapiens
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<400> 1578
Cys Arg Gly Asp Ile Gln Ile Arg Asp Lys Gly Glu Ala Met Leu Arg
  1             5             10             15
Lys Thr Leu Asp Arg Ala His Phe Thr Pro Pro Asn Arg Tyr Ile Trp
          20             25             30
Ile Tyr Pro Phe Ser Ala Ser Ser Phe Ser Thr Ile Lys Asn Val Thr
          35             40             45
Ile Leu Asn Ala His Lys Ser His Ser Ser Val Thr Phe Cys Glu Cys
          50             55             60
Ser Thr Ile Phe Ser Phe Ser Met Thr Phe Gln Pro Gln Ala Glu Lys
  65             70             75             80
Thr Val Tyr Ser Leu Thr Gln Arg Leu Lys Arg Ile Phe Tyr Tyr Phe
          85             90             95
Lys Tyr Tyr Thr Phe Arg Thr Ile Thr Cys Leu Arg Lys Leu Ser Gln
          100             105             110
Asn Val Asp Leu Val Lys
          115

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<210> 1579
<211> 181
<212> PRT
<213> Homo sapiens
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$\langle 220 \rangle$

<221> SITE  
 <222> (132)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (139)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (168)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (170)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (181)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1579

Met Asn Leu Ser Thr Ala Leu Leu Phe Leu Asn Leu Leu Phe Leu Leu  
 1 5 10 15

Asp Gly Trp Ile Thr Ser Phe Asn Val Asp Gly Leu Cys Ile Ala Val  
 20 25 30

Ala Val Leu Leu His Phe Phe Leu Leu Ala Thr Phe Thr Trp Met Gly  
 35 40 45

Leu Glu Ala Ile His Met Tyr Ile Ala Leu Val Lys Val Phe Asn Thr  
 50 55 60

Tyr Ile Arg Arg Tyr Ile Leu Lys Phe Cys Ile Ile Gly Trp Gly Leu  
 65 70 75 80

Pro Ala Leu Val Val Ser Val Val Leu Ala Ser Arg Asn Asn Asn Glu  
 85 90 95

Val Tyr Gly Lys Glu Ser Tyr Gly Lys Glu Lys Gly Asp Glu Phe Cys  
 100 105 110

Trp Ile Gln Asp Pro Val Ile Phe Tyr Val Thr Cys Ala Gly Tyr Phe  
 115 120 125

Gly Val Met Xaa Phe Leu Asn Ile Ala Met Xaa Ile Val Val Met Val  
 130 135 140

Gln Ile Cys Gly Arg Asn Gly Lys Arg Ser Asn Arg Thr Leu Arg Glu  
 145 150 155 160

Glu Val Val Arg Asn Leu Arg Xaa Val Xaa Ser Leu Thr Phe Leu Val  
 165 170 175

Gly Met Thr Trp Xaa  
 180

&lt;210&gt; 1580

&lt;211&gt; 320

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (168)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1580

Met	Asn	Leu	Ser	Thr	Ala	Leu	Leu	Phe	Leu	Asn	Leu	Leu	Phe	Leu	Leu
1				5					10					15	
Asp	Gly	Trp	Ile	Thr	Ser	Phe	Asn	Val	Asp	Gly	Leu	Cys	Ile	Ala	Val
			20					25					30		
Ala	Val	Leu	Leu	His	Phe	Phe	Leu	Leu	Ala	Thr	Phe	Thr	Trp	Met	Gly
		35					40					45			
Leu	Glu	Ala	Ile	His	Met	Tyr	Ile	Ala	Leu	Val	Lys	Val	Phe	Asn	Thr
	50					55					60				
Tyr	Ile	Arg	Arg	Tyr	Ile	Leu	Lys	Phe	Cys	Ile	Ile	Gly	Trp	Gly	Leu
65					70					75					80
Pro	Ala	Leu	Val	Val	Ser	Val	Val	Leu	Ala	Ser	Arg	Asn	Asn	Asn	Glu
				85					90					95	
Val	Tyr	Gly	Lys	Glu	Ser	Tyr	Gly	Lys	Glu	Lys	Gly	Asp	Glu	Phe	Cys
			100					105					110		
Trp	Ile	Gln	Asp	Pro	Val	Ile	Phe	Tyr	Val	Thr	Cys	Ala	Gly	Tyr	Phe
		115					120					125			
Gly	Val	Met	Phe	Phe	Leu	Asn	Ile	Ala	Met	Phe	Ile	Val	Val	Met	Val
	130					135					140				
Gln	Ile	Cys	Gly	Arg	Asn	Gly	Lys	Arg	Ser	Asn	Arg	Thr	Leu	Arg	Glu
145					150					155					160
Glu	Val	Leu	Arg	Asn	Leu	Arg	Xaa	Val	Val	Ser	Leu	Thr	Phe	Leu	Leu
				165					170					175	
Gly	Met	Thr	Trp	Gly	Phe	Ala	Phe	Phe	Ala	Trp	Gly	Pro	Leu	Asn	Ile
			180					185					190		
Pro	Phe	Met	Tyr	Leu	Phe	Ser	Ile	Phe	Asn	Ser	Leu	Gln	Gly	Leu	Phe
		195					200					205			
Ile	Phe	Ile	Phe	His	Cys	Ala	Met	Lys	Glu	Asn	Val	Gln	Lys	Gln	Trp
	210					215					220				
Arg	Arg	His	Leu	Cys	Cys	Gly	Arg	Phe	Arg	Leu	Ala	Asp	Asn	Ser	Asp
225					230					235					240
Trp	Ser	Lys	Thr	Ala	Thr	Asn	Ile	Ile	Lys	Lys	Ser	Ser	Asp	Asn	Leu

				245						250					255	
Gly	Lys	Ser	Leu	Ser	Ser	Ser	Ser	Ile	Gly	Ser	Asn	Ser	Thr	Tyr	Leu	
			260					265					270			
Thr	Ser	Lys	Ser	Lys	Ser	Ser	Ser	Thr	Thr	Tyr	Phe	Lys	Arg	Asn	Ser	
		275					280					285				
His	Thr	Asp	Asn	Val	Ser	Tyr	Glu	His	Ser	Phe	Asn	Lys	Ser	Gly	Ser	
	290					295					300					
Leu	Arg	Gln	Cys	Phe	His	Gly	Gln	Val	Leu	Val	Lys	Thr	Gly	Pro	Cys	
305					310					315					320	

<210> 1581  
 <211> 131  
 <212> PRT  
 <213> Homo sapiens

<400> 1581  
 Asn Ile Phe Leu Glu Trp Ile Leu Arg Arg Ile Leu Ser Leu Trp Arg  
 1 5 10 15  
 Gly Thr Phe Leu Met His Gly Arg Ala Gly Val Asn Arg Ile Ser Tyr  
 20 25 30  
 Trp Pro Ala Asp Pro Glu Ile Ser Leu Leu Thr Glu Ala Ser Ser Ser  
 35 40 45  
 Glu Asp Ala Lys Leu Asp Ala Lys Ala Val Glu Arg Leu Lys Ser Asn  
 50 55 60  
 Ser Arg Ala His Val Cys Val Leu Leu Gln Pro Leu Val Cys Tyr Met  
 65 70 75 80  
 Val Gln Phe Val Glu Glu Thr Ser Tyr Lys Cys Asp Phe Ile Gln Lys  
 85 90 95  
 Ile Thr Lys Thr Leu Pro Asp Ala Asn Thr Asp Phe Tyr Tyr Glu Cys  
 100 105 110  
 Lys Gln Glu Arg Ile Lys Glu Tyr Glu Met Leu Lys Lys Lys Lys Lys  
 115 120 125  
 Lys Lys Thr  
 130

<210> 1582  
 <211> 87  
 <212> PRT  
 <213> Homo sapiens

<400> 1582

Met Thr Gly Gln Ile Pro Arg Leu Ser Lys Val Asn Leu Phe Thr Leu  
 1 5 10 15  
 Leu Ser Leu Trp Met Glu Leu Phe Pro Ala Glu Ala Gln Arg Gln Lys  
 20 25 30  
 Ser Gln Lys Asn Glu Glu Gly Lys His Gly Pro Leu Gly Asp Asn Glu  
 35 40 45  
 Glu Arg Thr Arg Val Ser Thr Asp Lys Arg Gln Lys Thr Met Phe Cys  
 50 55 60  
 Leu Phe Glu Asn Asp Cys Lys Cys Lys Ala Leu Arg Val Met Ile Arg  
 65 70 75 80  
 Ser Met Ser Arg Ser Val Pro  
 85

<210> 1583  
 <211> 87  
 <212> PRT  
 <213> Homo sapiens

<400> 1583  
 Met Thr Gly Gln Ile Pro Arg Leu Ser Lys Val Asn Leu Phe Thr Leu  
 1 5 10 15  
 Leu Ser Leu Trp Met Glu Leu Phe Pro Ala Glu Ala Gln Arg Gln Lys  
 20 25 30  
 Ser Gln Lys Asn Glu Glu Gly Lys His Gly Pro Leu Gly Asp Asn Glu  
 35 40 45  
 Glu Arg Thr Arg Val Ser Thr Asp Lys Arg Gln Lys Thr Met Phe Cys  
 50 55 60  
 Leu Phe Glu Asn Asp Cys Lys Cys Lys Ala Leu Arg Val Met Ile Arg  
 65 70 75 80  
 Ser Met Ser Arg Ser Val Pro  
 85

<210> 1584  
 <211> 113  
 <212> PRT  
 <213> Homo sapiens

<400> 1584  
 Met Ser Pro Ser Pro Arg Trp Gly Phe Leu Cys Val Leu Phe Thr Ala  
 1 5 10 15  
 Val His Pro Ala Pro Ser Thr Ala Pro Val Gln Asp Lys Cys Pro Val  
 20 25 30  
 Asn Thr Trp Glu Ala Met Gln Ala Ser Ser Gln Gln Leu Leu Gln Thr  
 35 40 45

Asp Pro Arg Pro Lys Pro Phe Leu Leu Pro Pro Leu Pro Pro Leu Leu  
     50                    55                    60  
 Leu Ile Ser Ala Gly Thr Glu Val Ser Ser Leu Val Phe Gln Lys Ser  
     65                    70                    75                    80  
 Pro Leu His Thr Gln Pro Glu Gly Ala Ile Lys Thr Ala Gly Gln Pro  
                     85                    90                    95  
 Thr Ser Val His Ser Lys Val Leu Ser Lys Gly Ser Leu Leu Leu Gly  
             100                    105                    110  
 Glu

<210> 1585  
 <211> 94  
 <212> PRT  
 <213> Homo sapiens

<400> 1585  
 Met Pro His Ser Ser Leu Tyr Pro Pro Pro Phe Phe Lys Met Lys Leu  
     1                    5                    10                    15  
 Ile Ile Arg Val Trp Phe Ile Ile Ser Leu Phe Phe Val Gln Gly Arg  
             20                    25                    30  
 Thr Asn Pro Cys Ile Leu Leu Pro Tyr Thr His Pro Gln Val Ala Leu  
             35                    40                    45  
 His Leu Leu Phe Cys Ala Leu Leu Phe Ser Asp Ala Leu Gly Lys Ala  
     50                    55                    60  
 Thr Ser Val Met Thr Tyr Thr Gly Phe Phe Thr His Ser Thr His Cys  
     65                    70                    75                    80  
 Arg Phe His Ile Ser Cys Phe Ser Leu Ser Phe Leu Ile Leu  
             85                    90

<210> 1586  
 <211> 133  
 <212> PRT  
 <213> Homo sapiens

<400> 1586  
 His Gln Ala Ile Lys Pro Gly Tyr Ser Ala Glu Asn Val Ala His Thr  
     1                    5                    10                    15  
 Asp His Thr Leu Gly Cys Val Thr Ile Val Trp Cys Thr Cys Trp Lys  
             20                    25                    30  
 Asn Ser Ser Met Leu Leu Gly Asp Ile Ile Ser Val Gly Asn Met Pro  
     35                    40                    45  
 Leu Thr Asp Phe Phe Phe Phe Leu Phe Ala Val Gly Leu Gly Gln Leu

50                      55                      60  
 Ile Gln Gln Ser Ile Phe Phe Phe Phe Leu Ser Pro Asn Leu Asn Arg  
 65                      70                      75                      80  
 Ser Lys Met Cys Ser Gly Ile Pro Gly Asn Arg Cys Val Cys Lys Val  
                     85                      90                      95  
 Lys Asn Arg Leu Phe Arg Asn Ser Leu Phe Arg Tyr Leu His Pro Ala  
                     100                      105                      110  
 Ser His Val Lys Tyr Leu Ser Leu Lys Gly Leu Arg Cys Thr Ser Phe  
                     115                      120                      125  
 Ile Ser Tyr Phe Ser  
 130

<210> 1587  
 <211> 94  
 <212> PRT  
 <213> Homo sapiens

<400> 1587  
 Met Pro His Ser Ser Leu Tyr Pro Pro Pro Phe Phe Lys Met Lys Leu  
 1                      5                      10                      15  
 Ile Ile Arg Val Trp Phe Ile Ile Ser Leu Phe Phe Val Gln Gly Arg  
                     20                      25                      30  
 Thr Asn Pro Cys Ile Leu Leu Pro Tyr Thr His Pro Gln Val Ala Leu  
                     35                      40                      45  
 His Leu Leu Phe Cys Ala Leu Leu Phe Ser Asp Ala Leu Gly Lys Ala  
                     50                      55                      60  
 Thr Ser Val Met Thr Tyr Thr Gly Phe Phe Thr His Ser Thr His Cys  
 65                      70                      75                      80  
 Arg Phe His Ile Ser Cys Phe Ser Leu Ser Phe Leu Ile Leu  
                     85                      90

<210> 1588  
 <211> 215  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (116)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1588  
 Met Glu Leu Ser Cys Pro Gly Ser Arg Cys Pro Val Gln Glu Gln Arg  
 1                      5                      10                      15  
 Ala Arg Trp Glu Arg Lys Arg Ala Cys Thr Ala Arg Glu Leu Leu Glu



20 25 30  
 Thr Glu Arg Arg Tyr Gln Glu Gln Leu Gly Leu Val Ala Thr Tyr Phe  
 35 40 45  
 Leu Gly Ile Leu Lys Ala Lys Gly Thr Leu Arg Pro Pro Glu Arg Gln  
 50 55 60  
 Ala Leu Phe Gly Ser Trp Glu Leu Ile Tyr Gly Ala Ser Gln Glu Leu  
 65 70 75 80  
 Leu Pro Tyr Leu Glu Gly Gly Cys Trp Gly Gln Gly Leu Glu Gly Phe  
 85 90 95  
 Cys Arg His Leu Glu Leu Tyr Asn Gln Phe Ala Ala Asn Ser Glu Arg  
 100 105 110  
 Ser Gln Thr Xaa Leu Gln Glu Gln Leu Lys Lys Asn Lys Gly Phe Arg  
 115 120 125  
 Lys Phe Val Arg Leu Gln Glu Gly Arg Pro Glu Phe Gly Gly Leu Gln  
 130 135 140  
 Leu Gln Asp Leu Leu Pro Leu Pro Leu Gln Arg Leu Gln Gln Tyr Glu  
 145 150 155 160  
 Asn Leu Val Val Ala Leu Ala Glu Asn Thr Gly Pro Asn Ser Pro Asp  
 165 170 175  
 His Gln Gln Leu Thr Arg Arg Phe Leu Leu Leu Gly Asn Ala Gly Trp  
 180 185 190  
 Arg Leu Pro Leu Leu Tyr Ser Phe Leu Ile Leu Thr Ser Asn Asn Val  
 195 200 205  
 Trp Tyr Asp Pro Ile Phe His  
 210 215

&lt;210&gt; 1589

&lt;211&gt; 69

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1589

Glu Ile Leu Leu Lys Lys Lys Asn Gln Glu Thr Lys Ser Asn Pro Thr  
 1 5 10 15  
 Lys Pro Gln Met Asn Gln Pro Leu Thr Gln Met Arg Gly Phe Gly Thr  
 20 25 30  
 Asp Lys Leu Cys Ala Val Ser Met Ala Arg His Leu Ser Arg Leu Gln  
 35 40 45  
 Leu Cys Lys Cys Gly Tyr Phe Tyr Val Val Tyr Ser Phe Tyr His Leu  
 50 55 60  
 Phe Phe His Trp Ile  
 65

&lt;210&gt; 1590

&lt;211&gt; 211

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (21)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (104)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1590

Met	Ser	Gly	Met	Thr	Leu	Ser	Ser	Thr	Asp	Met	Tyr	Thr	Val	Ser	Leu
1				5					10					15	

Leu	Leu	Cys	Leu	Xaa	Phe	Lys	Lys	Ser	Asp	Pro	Asp	Pro	Gly	Pro	Phe
			20					25					30		

Gln	Asn	Asn	Leu	Phe	His	Asn	His	Gly	Thr	Gln	Ser	Gln	Ser	Cys	Met
	35						40					45			

Gly	Ser	Lys	Val	Gly	Asp	Val	Ile	Pro	Gly	Ala	Ala	Arg	Leu	Ile	Ser
	50					55					60				

Glu	Thr	Ala	Gln	Arg	Val	His	Thr	Ile	Gly	Gln	Lys	Gln	Lys	Asn	Asp
65					70					75					80

Gln	His	Leu	Arg	Arg	Val	Gln	Ala	Leu	Leu	Ser	Gly	Arg	Gln	Ala	Lys
			85						90					95	

Gly	Leu	Thr	Ser	Gly	Arg	Trp	Xaa	Leu	Arg	Gln	Gly	Trp	Leu	Leu	Val
			100					105					110		

Val	Pro	Pro	His	Gly	Glu	Pro	Arg	Pro	Arg	Met	Phe	Phe	Leu	Phe	Thr
		115					120					125			

Asp	Val	Leu	Leu	Met	Ala	Lys	Pro	Arg	Pro	Pro	Leu	His	Leu	Leu	Arg
	130					135					140				

Ser	Gly	Thr	Phe	Ala	Cys	Lys	Ala	Leu	Tyr	Pro	Met	Ala	Gln	Cys	His
145					150					155					160

Leu	Ser	Arg	Val	Phe	Gly	His	Ser	Gly	Gly	Pro	Cys	Gly	Gly	Leu	Leu
			165						170					175	

Ser	Leu	Ser	Phe	Pro	Arg	Glu	Lys	Leu	Leu	Leu	Met	Ser	Thr	Asp	Gln
			180					185						190	

Glu	Glu	Leu	Ser	Arg	Trp	Tyr	His	Ser	Leu	Thr	Trp	Ala	Ile	Ser	Ser
		195					200					205			

Gln	Lys	Asn
210		

<210> 1591  
 <211> 349  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (183)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (191)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (192)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (334)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (344)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (345)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (348)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1591  
 Met Phe Leu Asp Arg Pro Gln Gln Trp Leu Gln Leu Val Leu Leu Pro  
     1                    5                    10                    15  
 Pro Ala Leu Phe Ile Pro Ser Thr Glu Asn Glu Glu Gln Arg Leu Ala  
                     20                    25                    30  
 Ser Ala Arg Ala Val Pro Arg Asn Val Gln Pro Tyr Val Val Tyr Glu  
             35                    40                    45  
 Glu Val Thr Asn Val Trp Ile Asn Val His Asp Ile Phe Tyr Pro Phe  
     50                    55                    60  
 Pro Gln Ser Glu Gly Glu Asp Glu Leu Cys Phe Leu Arg Ala Asn Glu  
     65                    70                    75                    80  
 Cys Lys Thr Gly Phe Cys His Leu Tyr Lys Val Thr Ala Val Leu Lys

85										90					95				
Ser	Gln	Gly	Tyr	Asp	Trp	Ser	Glu	Pro	Phe	Ser	Pro	Gly	Glu	Asp	Glu				
			100					105					110						
Phe	Lys	Cys	Pro	Ile	Lys	Glu	Glu	Ile	Ala	Leu	Thr	Ser	Gly	Glu	Trp				
		115					120					125							
Glu	Val	Leu	Ala	Arg	His	Gly	Ser	Lys	Ile	Trp	Val	Asn	Glu	Glu	Thr				
		130				135					140								
Lys	Leu	Val	Tyr	Phe	Gln	Gly	Thr	Lys	Asp	Thr	Pro	Leu	Glu	His	His				
145					150					155					160				
Leu	Tyr	Val	Val	Ser	Tyr	Glu	Ala	Ala	Gly	Glu	Ile	Val	Arg	Leu	Thr				
				165					170					175					
Thr	Pro	Gly	Phe	Ser	His	Xaa	Cys	Ser	Met	Ser	Gln	Asn	Phe	Xaa	Xaa				
			180					185					190						
Phe	Val	Ser	His	Ile	Thr	Ala	Gln	Val	Ala	Ala	Ala	Ser	Ala	Gly	Asn				
		195					200					205							
Gln	Ala	Gly	Gly	Thr	Glu	Trp	Pro	Ala	Gly	Pro	Ser	Glu	Ala	Leu	Cys				
		210				215					220								
Pro	Ala	Gln	Arg	Trp	Pro	Ala	Pro	Arg	Ser	Arg	Cys	Leu	His	Arg	Pro				
225					230					235					240				
Asp	Ala	Phe	Tyr	Pro	Phe	Leu	Asn	Ala	Leu	Gly	Phe	Tyr	Val	Arg	Cys				
				245					250					255					
Phe	Leu	Val	Ala	Glu	Thr	Glu	Arg	Trp	Trp	Ser	Arg	Ala	Ser	Pro	Ser				
			260					265					270						
Ser	Pro	Arg	Leu	Leu	Gly	Gly	Gly	Gly	His	Thr	Leu	Met	Gly	Thr	Gly				
		275					280					285							
Glu	Ala	Arg	Arg	Asp	Ser	Glu	Glu	Arg	Ala	Ala	Phe	Arg	Leu	Gly	Leu				
		290				295					300								
Pro	Val	Thr	Ser	Gln	Ser	Pro	Gly	Pro	Ala	Ser	His	Arg	Pro	Gln	His				
305					310					315					320				
Pro	Ser	Met	Gln	Leu	Pro	Val	Pro	Pro	Gly	Gln	Pro	Pro	Xaa	Leu	Asp				
				325					330					335					
Val	Cys	Val	Leu	Phe	Gly	Gly	Xaa	Xaa	Phe	Ile	Xaa	Ile							
			340					345											

&lt;210&gt; 1592

&lt;211&gt; 144

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1592

Ala	Pro	Phe	Leu	Pro	Lys	Pro	Glu	Gln	Arg	Val	Met	Arg	Ala	Pro	Gln			
1				5				10						15				

Glu Lys Arg Pro Gly Pro Ala Gly Gly Thr Thr Cys Gly Gln Pro Ser  
                   20                                  25                                  30  
 Cys Pro Gln Ala Phe Arg Gln Ala Leu Lys Arg Thr Glu Leu Pro Arg  
                   35                                  40                                  45  
 Ser Ala Gly Gln Trp Arg Leu Ser Pro Pro Gln Pro Ser Arg Pro Ala  
                   50                                  55                                  60  
 Thr Cys Val Cys Leu Thr Arg Thr His Gln Gly Phe Arg Gly Trp Glu  
                   65                                  70                                  75                                  80  
 Leu Asn His Pro His Leu Arg Val Ile Phe Pro Ser Pro Leu Pro Ser  
                                   85                                  90                                  95  
 Pro Pro Arg Ala Leu Pro Gly Ala Gly Lys Lys Lys Ser Lys Lys Lys  
                   100                                  105                                  110  
 Arg Lys Lys Lys Lys Arg Asn Lys Pro Pro Leu His Ile Met Glu Arg  
                   115                                  120                                  125  
 Lys Tyr Phe Cys Arg Phe Leu Phe Phe Tyr Asn Tyr Ala Trp Lys Lys  
                   130                                  135                                  140

&lt;210&gt; 1593

&lt;211&gt; 497

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (183)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1593

Met Phe Leu Asp Arg Pro Gln Gln Trp Leu Gln Leu Val Leu Leu Pro  
           1                                  5                                  10                                  15  
 Pro Ala Leu Phe Ile Pro Ser Thr Glu Asn Glu Glu Gln Arg Leu Ala  
                   20                                  25                                  30  
 Ser Ala Arg Ala Val Pro Arg Asn Val Gln Pro Tyr Val Val Tyr Glu  
                   35                                  40                                  45  
 Glu Val Thr Asn Val Trp Ile Asn Val His Asp Ile Phe Tyr Pro Phe  
                   50                                  55                                  60  
 Pro Gln Ser Glu Gly Glu Asp Glu Leu Cys Phe Leu Arg Ala Asn Glu  
                   65                                  70                                  75                                  80  
 Cys Lys Thr Gly Phe Cys His Leu Tyr Lys Val Thr Ala Val Leu Lys  
                   85                                  90                                  95  
 Ser Gln Gly Tyr Asp Trp Ser Glu Pro Phe Ser Pro Gly Glu Asp Glu

100					105					110					
Phe	Lys	Cys	Pro	Ile	Lys	Glu	Glu	Ile	Ala	Leu	Thr	Ser	Gly	Glu	Trp
		115					120					125			
Glu	Val	Leu	Ala	Arg	His	Gly	Ser	Lys	Ile	Trp	Val	Asn	Glu	Glu	Thr
	130					135					140				
Lys	Leu	Val	Tyr	Phe	Gln	Gly	Thr	Lys	Asp	Thr	Pro	Leu	Glu	His	His
145						150					155				160
Leu	Tyr	Val	Val	Ser	Tyr	Glu	Ala	Ala	Gly	Glu	Ile	Val	Arg	Leu	Thr
				165					170					175	
Thr	Pro	Gly	Phe	Ser	His	Xaa	Cys	Ser	Met	Ser	Gln	Asn	Phe	Asp	Met
			180						185					190	
Phe	Val	Ser	His	Tyr	Ser	Ser	Val	Ser	Thr	Pro	Pro	Cys	Val	His	Val
		195					200					205			
Tyr	Lys	Leu	Ser	Gly	Pro	Asp	Asp	Asp	Pro	Leu	His	Lys	Gln	Pro	Arg
	210					215					220				
Phe	Trp	Ala	Ser	Met	Met	Glu	Ala	Ala	Ser	Cys	Pro	Pro	Asp	Tyr	Val
225						230					235				240
Pro	Pro	Glu	Ile	Phe	His	Phe	His	Thr	Arg	Ser	Asp	Val	Arg	Leu	Tyr
				245					250					255	
Gly	Met	Ile	Tyr	Lys	Pro	His	Ala	Leu	Gln	Pro	Gly	Lys	Lys	His	Pro
			260						265					270	
Thr	Val	Leu	Phe	Val	Tyr	Gly	Gly	Pro	Gln	Val	Gln	Leu	Val	Asn	Asn
		275					280							285	
Ser	Phe	Lys	Gly	Ile	Lys	Tyr	Leu	Arg	Leu	Asn	Thr	Leu	Ala	Ser	Leu
		290				295					300				
Gly	Tyr	Ala	Val	Val	Val	Ile	Asp	Gly	Arg	Gly	Ser	Cys	Gln	Arg	Gly
305						310					315				320
Leu	Arg	Phe	Glu	Gly	Ala	Leu	Lys	Asn	Gln	Met	Gly	Gln	Val	Glu	Ile
				325					330					335	
Glu	Asp	Gln	Val	Glu	Gly	Leu	Gln	Phe	Val	Ala	Glu	Lys	Tyr	Gly	Phe
			340					345					350		
Ile	Asp	Leu	Ser	Arg	Val	Ala	Ile	His	Gly	Trp	Ser	Tyr	Gly	Gly	Phe
		355					360					365			
Leu	Ser	Leu	Met	Gly	Leu	Ile	His	Lys	Pro	Gln	Val	Phe	Lys	Val	Ala
		370				375					380				
Ile	Ala	Gly	Ala	Pro	Val	Thr	Val	Trp	Met	Ala	Tyr	Asp	Thr	Gly	Tyr
385						390					395				400
Thr	Glu	Arg	Tyr	Met	Asp	Val	Pro	Glu	Asn	Asn	Gln	His	Gly	Tyr	Glu
				405					410					415	
Ala	Gly	Ser	Val	Ala	Leu	His	Val	Glu	Lys	Leu	Pro	Asn	Glu	Pro	Asn

420 425 430  
 Arg Leu Leu Ile Leu His Gly Phe Leu Asp Glu Asn Val His Phe Phe  
 435 440 445  
 His Thr Asn Phe Leu Val Ser Gln Leu Ile Arg Ala Gly Lys Pro Tyr  
 450 455 460  
 Gln Leu Gln Ile Tyr Pro Asn Glu Arg His Ser Ile Arg Cys Pro Glu  
 465 470 475 480  
 Ser Gly Glu His Tyr Glu Val Thr Leu Leu His Phe Leu Gln Glu Tyr  
 485 490 495  
 Leu

<210> 1594  
 <211> 497  
 <212> PRT  
 <213> Homo sapiens

<400> 1594  
 Met Phe Leu Asp Arg Pro Gln Gln Trp Leu Gln Leu Val Leu Leu Pro  
 1 5 10 15  
 Pro Ala Leu Phe Ile Pro Ser Thr Glu Asn Glu Glu Gln Arg Leu Ala  
 20 25 30  
 Ser Ala Arg Ala Val Pro Arg Asn Val Gln Pro Tyr Val Val Tyr Glu  
 35 40 45  
 Glu Val Thr Asn Val Trp Ile Asn Val His Asp Ile Phe Tyr Pro Phe  
 50 55 60  
 Pro Gln Ser Glu Gly Glu Asp Glu Leu Cys Phe Leu Arg Ala Asn Glu  
 65 70 75 80  
 Cys Lys Thr Gly Phe Cys His Leu Tyr Lys Val Thr Ala Val Leu Lys  
 85 90 95  
 Ser Gln Gly Tyr Asp Trp Ser Glu Pro Phe Ser Pro Gly Glu Asp Glu  
 100 105 110  
 Phe Lys Cys Pro Ile Lys Glu Glu Ile Ala Leu Thr Ser Gly Glu Trp  
 115 120 125  
 Glu Val Leu Ala Arg His Gly Ser Lys Ile Trp Val Asn Glu Glu Thr  
 130 135 140  
 Lys Leu Val Tyr Phe Gln Gly Thr Lys Asp Thr Pro Leu Glu His His  
 145 150 155 160  
 Leu Tyr Val Val Ser Tyr Glu Ala Ala Gly Glu Ile Val Arg Leu Thr  
 165 170 175  
 Thr Pro Gly Phe Ser His Ser Cys Ser Met Ser Gln Asn Phe Asp Met  
 180 185 190

Phe Val Ser His Tyr Ser Ser Val Ser Thr Pro Pro Cys Val His Val  
 195 200 205  
 Tyr Lys Leu Ser Gly Pro Asp Asp Asp Pro Leu His Lys Gln Pro Arg  
 210 215 220  
 Phe Trp Ala Ser Met Met Glu Ala Ala Ser Cys Pro Pro Asp Tyr Val  
 225 230 235 240  
 Pro Pro Glu Ile Phe His Phe His Thr Arg Ser Asp Val Arg Leu Tyr  
 245 250 255  
 Gly Met Ile Tyr Lys Pro His Ala Leu Gln Pro Gly Lys Lys His Pro  
 260 265 270  
 Thr Val Leu Phe Val Tyr Gly Gly Pro Gln Val Gln Leu Val Asn Asn  
 275 280 285  
 Ser Phe Lys Gly Ile Lys Tyr Leu Arg Leu Asn Thr Leu Ala Ser Leu  
 290 295 300  
 Gly Tyr Ala Val Val Val Ile Asp Gly Arg Gly Ser Cys Gln Arg Gly  
 305 310 315 320  
 Leu Arg Phe Glu Gly Ala Leu Lys Asn Gln Met Gly Gln Val Glu Ile  
 325 330 335  
 Glu Asp Gln Val Glu Gly Leu Gln Phe Val Ala Glu Lys Tyr Gly Phe  
 340 345 350  
 Ile Asp Leu Ser Arg Val Ala Ile His Gly Trp Ser Tyr Gly Gly Phe  
 355 360 365  
 Leu Ser Leu Met Gly Leu Ile His Lys Pro Gln Val Phe Lys Val Ala  
 370 375 380  
 Ile Ala Gly Ala Pro Val Thr Val Trp Met Ala Tyr Asp Thr Gly Tyr  
 385 390 395 400  
 Thr Glu Arg Tyr Met Asp Val Pro Glu Asn Asn Gln His Gly Tyr Glu  
 405 410 415  
 Ala Gly Ser Val Ala Leu His Val Glu Lys Leu Pro Asn Glu Pro Asn  
 420 425 430  
 Arg Leu Leu Ile Leu His Gly Phe Leu Asp Glu Asn Val His Phe Phe  
 435 440 445  
 His Thr Asn Phe Leu Val Ser Gln Leu Ile Arg Ala Gly Lys Pro Tyr  
 450 455 460  
 Gln Leu Gln Ile Tyr Pro Asn Glu Arg His Ser Ile Arg Cys Pro Glu  
 465 470 475 480  
 Ser Gly Glu His Tyr Glu Val Thr Leu Leu His Phe Leu Gln Glu Tyr  
 485 490 495  
 Leu



&lt;210&gt; 1595

&lt;211&gt; 180

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1595

Met Thr Ser Val Ser Gln Ala Ser Leu Asp Val Ser Met Ile Ile Ile  
 1 5 10 15

Ile Ser Leu Gly Ala Ile Cys Ala Val Leu Leu Val Ile Met Val Leu  
 20 25 30

Phe Ala Thr Arg Cys Asn Arg Glu Lys Lys Asp Thr Arg Ser Tyr Asn  
 35 40 45

Cys Arg Val Ala Glu Ser Thr Tyr Gln His His Pro Lys Arg Pro Ser  
 50 55 60

Arg Gln Ile His Lys Gly Asp Ile Thr Leu Val Pro Thr Ile Asn Gly  
 65 70 75 80

Thr Leu Pro Ile Arg Ser His His Arg Ser Ser Pro Ser Ser Ser Pro  
 85 90 95

Thr Leu Glu Arg Gly Gln Met Gly Ser Arg Gln Ser His Asn Ser His  
 100 105 110

Gln Ser Leu Asn Ser Leu Val Thr Ile Ser Ser Asn His Val Pro Glu  
 115 120 125

Asn Phe Ser Leu Glu Leu Thr His Ala Thr Pro Ala Val Glu Arg Leu  
 130 135 140

Ser Ala Ser Phe Asn Ala Ser Pro Gly Ala Ile Ser Ala Lys Thr Lys  
 145 150 155 160

Phe Ser Arg Lys Gln Ile Phe Gln Glu Leu Gln Ile Cys Pro Ser Arg  
 165 170 175

His Gly Gln Ile  
 180

&lt;210&gt; 1596

&lt;211&gt; 240

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1596

Met Thr Ser Val Ser Gln Ala Ser Leu Asp Val Ser Met Ile Ile Ile  
 1 5 10 15

Ile Ser Leu Gly Ala Ile Cys Ala Val Leu Leu Val Ile Met Val Leu  
 20 25 30

Phe Ala Thr Arg Cys Asn Arg Glu Lys Lys Asp Thr Arg Ser Tyr Asn

35				40				45							
Cys	Arg	Val	Ala	Glu	Ser	Thr	Tyr	Gln	His	His	Pro	Lys	Arg	Pro	Ser
	50					55					60				
Arg	Gln	Ile	His	Lys	Gly	Asp	Ile	Thr	Leu	Val	Pro	Thr	Ile	Asn	Gly
65					70					75					80
Thr	Leu	Pro	Ile	Arg	Ser	His	His	Arg	Ser	Ser	Pro	Ser	Ser	Ser	Pro
				85					90					95	
Thr	Leu	Glu	Arg	Gly	Gln	Met	Gly	Ser	Arg	Gln	Ser	His	Asn	Ser	His
			100					105					110		
Gln	Ser	Leu	Asn	Ser	Leu	Val	Thr	Ile	Ser	Ser	Asn	His	Val	Pro	Glu
		115					120					125			
Asn	Phe	Ser	Leu	Glu	Leu	Thr	His	Ala	Thr	Pro	Ala	Val	Glu	Val	Ser
	130					135					140				
Gln	Leu	Leu	Ser	Met	Leu	His	Gln	Gly	Gln	Tyr	Gln	Pro	Arg	Pro	Ser
145					150					155					160
Phe	Arg	Gly	Asn	Lys	Tyr	Ser	Arg	Ser	Tyr	Arg	Tyr	Ala	Leu	Gln	Asp
				165					170					175	
Met	Asp	Lys	Phe	Ser	Leu	Lys	Asp	Ser	Gly	Arg	Gly	Asp	Ser	Glu	Ala
			180					185					190		
Gly	Asp	Ser	Asp	Tyr	Asp	Leu	Gly	Arg	Asp	Ser	Pro	Ile	Asp	Arg	Leu
		195					200					205			
Leu	Gly	Glu	Gly	Phe	Ser	Asp	Leu	Phe	Leu	Thr	Asp	Gly	Arg	Ile	Pro
	210					215					220				
Ala	Ser	Tyr	Glu	Thr	Leu	His	Gly	Gly	Val	Gln	Gly	Pro	Gly	Thr	Leu
225					230					235					240

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<210> 1597
<211> 447
<212> PRT
<213> Homo sapiens
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<400> 1597
Met Thr Ser Val Ser Gln Ala Ser Leu Asp Val Ser Met Ile Ile Ile
  1          5          10          15

Ile Ser Leu Gly Ala Ile Cys Ala Val Leu Leu Val Ile Met Val Leu
          20          25          30

Phe Ala Thr Arg Cys Asn Arg Glu Lys Lys Asp Thr Arg Ser Tyr Asn
          35          40          45

Cys Arg Val Ala Glu Ser Thr Tyr Gln His His Pro Lys Arg Pro Ser
  50          55          60

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Arg Gln Ile His Lys Gly Asp Ile Thr Leu Val Pro Thr Ile Asn Gly  
 65 70 75 80  
 Thr Leu Pro Ile Arg Ser His His Arg Ser Ser Pro Ser Ser Ser Pro  
 85 90 95  
 Thr Leu Glu Arg Gly Gln Met Gly Ser Arg Gln Ser His Asn Ser His  
 100 105 110  
 Gln Ser Leu Asn Ser Leu Val Thr Ile Ser Ser Asn His Val Pro Glu  
 115 120 125  
 Asn Phe Ser Leu Glu Leu Thr His Ala Thr Pro Ala Val Glu Val Ser  
 130 135 140  
 Gln Leu Leu Ser Met Leu His Gln Gly Gln Tyr Gln Pro Arg Pro Ser  
 145 150 155 160  
 Phe Arg Gly Asn Lys Tyr Ser Arg Ser Tyr Arg Tyr Ala Leu Gln Asp  
 165 170 175  
 Met Asp Lys Phe Ser Leu Lys Asp Ser Gly Arg Gly Asp Ser Glu Ala  
 180 185 190  
 Gly Asp Ser Asp Tyr Asp Leu Gly Arg Asp Ser Pro Ile Asp Arg Leu  
 195 200 205  
 Leu Gly Glu Gly Phe Ser Asp Leu Phe Leu Thr Asp Gly Arg Ile Pro  
 210 215 220  
 Ala Ala Met Arg Leu Cys Thr Glu Glu Cys Arg Val Leu Gly His Ser  
 225 230 235 240  
 Asp Gln Cys Trp Met Pro Pro Leu Pro Ser Pro Ser Ser Asp Tyr Arg  
 245 250 255  
 Ser Asn Met Phe Ile Pro Gly Glu Glu Phe Pro Thr Gln Pro Gln Gln  
 260 265 270  
 Gln His Pro His Gln Ser Leu Glu Asp Asp Ala Gln Pro Ala Asp Ser  
 275 280 285  
 Gly Glu Lys Lys Lys Ser Phe Ser Thr Phe Gly Lys Asp Ser Pro Asn  
 290 295 300  
 Asp Glu Asp Thr Gly Asp Thr Ser Thr Ser Ser Leu Leu Ser Glu Met  
 305 310 315 320  
 Ser Ser Val Phe Gln Arg Leu Leu Pro Pro Ser Leu Asp Thr Tyr Ser  
 325 330 335  
 Glu Cys Ser Glu Val Asp Arg Ser Asn Ser Leu Glu Arg Arg Lys Gly  
 340 345 350  
 Pro Leu Pro Ala Lys Thr Val Gly Tyr Pro Gln Gly Val Ala Ala Trp  
 355 360 365  
 Ala Ala Ser Thr His Phe Gln Asn Pro Thr Thr Asn Cys Gly Pro Pro  
 370 375 380

Leu Gly Thr His Ser Ser Val Gln Pro Ser Ser Lys Trp Leu Pro Ala  
 385 390 395 400

Met Glu Glu Ile Pro Glu Asn Tyr Glu Glu Asp Asp Phe Asp Asn Val  
 405 410 415

Leu Asn His Leu Asn Asp Gly Lys His Glu Leu Met Asp Ala Ser Glu  
 420 425 430

Leu Val Ala Glu Ile Asn Lys Leu Leu Gln Asp Val Arg Gln Ser  
 435 440 445

<210> 1598

<211> 95

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (46)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1598

Met Thr Ser Tyr Ile Leu Ile Ser Phe Val Leu Leu Ile Gly Val Gly  
 1 5 10 15

Cys Ile Glu Lys Asp Gln Ser Cys Pro Val Phe Gly Gly Arg Lys Arg  
 20 25 30

Leu His Leu Leu Phe Val Gly Gly Gln Leu Arg Gln Val Xaa Leu Gly  
 35 40 45

Ala Pro Arg Pro Pro Gly Gly Gln Asp Pro Ser His Gln Arg Leu Gly  
 50 55 60

Arg Gly Glu Leu Pro Leu Val Arg Gln His His Arg Asp Leu His His  
 65 70 75 80

Arg Gly Pro His Gln Glu Gly Leu Gln Val His His Gln His Glu  
 85 90 95

<210> 1599

<211> 152

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (1)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1599

Xaa Pro Ser Trp Trp Gly Pro Arg Trp Cys Arg Ser Ser Cys Gly Val  
 1 5 10 15

Ala Arg Thr Arg Val Val His Pro Val Arg Val Ala Asp Gly Leu Asp  
                   20                                  25                                  30

Leu Ala Leu Leu Glu Val Gly Glu Leu Pro Ala Gly His Ala Leu Leu  
                   35                                  40                                  45

Ala Val Leu Val Val Glu Leu His Val Ala Ala Arg Leu Asp Pro Ala  
                   50                                  55                                  60

Asn Tyr Pro Ser Leu Leu Leu Gly Asp Gly Arg His Asp His Leu Gly  
                   65                                  70                                  75                                  80

Arg Gly Pro Glu Val Gly Cys Pro Val Ala Glu His His Ala Gly Gly  
                                   85                                  90                                  95

Leu Ile Asp Ala Ser Gly Asp Gly Val Asp Gly Gly Phe His Ile Asn  
                   100                                  105                                  110

His Arg Asp Pro Phe Pro Glu Asp Ser Gly Phe Ala Ser Asp Ala Leu  
                   115                                  120                                  125

Asn Thr Ala His Gly Ile Gln Glu Arg Ser Asp Leu Gln Gly Arg Pro  
                   130                                  135                                  140

Ala Val Thr Glu Lys Thr Arg His  
                   145                                  150

&lt;210&gt; 1600

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1600

Met Arg Thr Trp Ala Ser Leu Ala Leu Gly Leu Thr Arg Ala Leu Gly  
                   1                                  5                                  10                                  15

Gly Met Gly Ser Phe Leu Leu Arg Ile Leu Gly Trp Ser Trp Ala Met  
                   20                                  25                                  30

Gly Ser Arg Ser Arg Ala Arg Trp Pro Arg Gly Arg Leu Gly Phe Thr  
                   35                                  40                                  45

Ser Met Leu Ser Cys Met Arg Gln Cys Ser Val Cys Arg Met Ile Met  
                   50                                  55                                  60

Ser Leu Val Glu Val Leu Val Ala Thr Ser Gln Val Val Lys Leu Trp  
                   65                                  70                                  75                                  80

Ser Arg

&lt;210&gt; 1601

&lt;211&gt; 306

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

<220>  
 <221> SITE  
 <222> (171)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (180)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (182)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (188)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (208)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (210)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (211)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (218)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (219)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1601  
 Met Ala Leu Arg Leu Leu Arg Arg Ala Ala Arg Gly Ala Ala Ala Ala  
   1                  5                  10                  15  
 Ala Leu Leu Arg Leu Lys Ala Ser Leu Ala Ala Asp Ile Pro Arg Leu  
                   20                  25                  30  
 Gly Tyr Ser Ser Ser Ser His His Lys Tyr Ile Pro Arg Arg Ala Val  
                   35                  40                  45  
 Leu Tyr Val Pro Gly Asn Asp Glu Lys Lys Ile Lys Lys Ile Pro Ser  
   50                  55                  60  
 Leu Asn Val Asp Cys Ala Val Leu Asp Cys Glu Asp Gly Val Ala Ala  
   65                  70                  75                  80

Asn Lys Lys Asn Glu Ala Arg Leu Arg Ile Val Lys Thr Leu Glu Asp  
                             85                            90                            95  
 Ile Asp Leu Gly Pro Thr Glu Lys Cys Val Arg Val Asn Ser Val Ser  
                             100                            105                            110  
 Ser Gly Leu Ala Glu Glu Asp Leu Glu Thr Leu Leu Gln Ser Arg Val  
                             115                            120                            125  
 Leu Pro Ser Ser Leu Met Leu Pro Lys Val Glu Ser Pro Glu Glu Ile  
                             130                            135                            140  
 Gln Trp Ala Val Cys Glu Glu Thr Leu Lys Val Gly Pro Gln Val Gly  
                             145                            150                            155                            160  
 Leu Phe Leu Asp Ala Val Arg Phe Trp Arg Xaa Arg Leu Ser Ser His  
                             165                            170                            175  
 Ile Gly Ala Xaa Ser Xaa Lys Glu Thr Leu Asp Xaa Leu Tyr Ala Arg  
                             180                            185                            190  
 Gln Lys Ile Val Val Ile Ala Lys Ala Phe Gly Leu Gln Ala Val Xaa  
                             195                            200                            205  
 Leu Xaa Xaa Ile Asp Phe Arg Asp Gly Xaa Xaa Leu Leu Arg Gln Ser  
                             210                            215                            220  
 Arg Glu Gly Ala Ala Met Gly Phe Thr Gly Lys Gln Val Ile His Pro  
                             225                            230                            235                            240  
 Asn Gln Ile Ala Val Val Gln Glu Gln Phe Ser Pro Ser Pro Glu Lys  
                             245                            250                            255  
 Ile Lys Trp Ala Glu Glu Leu Ile Ala Ala Phe Lys Glu His Gln Gln  
                             260                            265                            270  
 Leu Gly Lys Gly Ala Phe Thr Phe Gln Gly Ser Met Ile Asp Met Pro  
                             275                            280                            285  
 Leu Leu Lys Gln Ala Gln Asn Thr Val Thr Leu Ala Thr Ser Ile Lys  
                             290                            295                            300  
 Glu Lys  
 305

&lt;210&gt; 1602

&lt;211&gt; 92

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1602

Met Glu Asp Arg Leu Leu Leu Ile Leu Val Phe Pro Leu Leu Trp Phe  
   1                            5                            10                            15

Pro Val Ala Val Phe Gln Leu Val Leu Leu Leu Pro Phe Leu Leu Ile  
                             20                            25                            30

His	Ser	Leu	Asn	Cys	Leu	Glu	Trp	Arg	His	Leu	Phe	Ser	Ala	Tyr	Arg
		35					40					45			
Val	His	Ile	Leu	Ala	Trp	Leu	Ala	Tyr	Pro	Cys	Phe	Cys	Val	Ser	Leu
	50					55					60				
Arg	Val	Arg	His	Cys	Ile	Glu	Leu	Phe	Ile	Gln	Ile	Val	Leu	Ser	Leu
65					70					75					80
Pro	Gln	Cys	Cys	Gly	Ile	Gly	Gly	Val	Pro	Ile	Leu				
				85					90						

<210> 1603

<211> 69

<212> PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

<221> SITE

<222> (59)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1603

Met Pro Thr Ser Ile Leu Leu Thr Trp His Leu Leu Thr Trp His Leu  
1 5 10 15

Leu Gly Cys His Lys Thr Asp Lys Ser Phe His Val Arg Leu Asp Thr  
20 25 30

Cys Gln Gly Gly Val Ser Lys Leu Gly His Arg Gln His Pro Arg Pro  
35 40 45

Gly His Trp Val Glu Glu Thr Val Leu Gly Xaa Thr Arg Arg Glu Gly  
50 55 60

Pro Gly Leu Phe. Pro  
65

<210> 1604.

<211> 69

<212> PRT

<213> Homo sapiens

<400> .1604

Met Pro Thr Ser Ile Leu Leu Thr Trp His Leu Leu Thr Trp His Leu  
1 5 10 15

Leu Gly Cys His Lys Thr Asp Lys Ser Phe His Val Arg Leu Asp Thr  
20 25 30

Cys Gln Gly Gly Val Ser Lys Leu Gly His Arg Gln His Pro Arg Pro  
35 40 45

Gly His Trp Val Glu Glu Thr Val Leu Gly Arg Ser Arg Arg Glu Gly  
50 55 60



Pro Gly Leu Phe Pro  
65

<210> 1605

<211> 76

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (67)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (74)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1605

Met Ile Trp Arg Ser Arg Ala Gly Ala Glu Leu Phe Ser Leu Met Ala  
1 5 10 15

Leu Trp Glu Trp Ile Ala Leu Ser Leu His Cys Trp Val Leu Ala Val  
20 25 30

Ala Ala Val Ser Asp Gln His Ala Thr Ser Pro Phe Asp Trp Leu Leu  
35 40 45

Ser Asp Lys Gly Pro Phe His Arg Ser Gln Glu Tyr Thr Asp Phe Val  
50 55 60

Asp Arg Xaa Arg Gln Gly Phe Ser Thr Xaa Tyr Lys  
65 70 75

<210> 1606

<211> 201

<212> PRT

<213> Homo sapiens

<400> 1606

Met Val Ala Met Val Glu Val Gln Leu Asp Ala Asp His Asp Tyr Pro  
1 5 10 15

Pro Gly Leu Leu Ile Ala Phe Ser Ala Cys Thr Thr Val Leu Val Ala  
20 25 30

Val His Leu Phe Ala Leu Met Ile Ser Thr Cys Ile Leu Pro Asn Ile  
35 40 45

Glu Ala Val Ser Asn Val His Asn Leu Asn Ser Val Lys Glu Ser Pro  
50 55 60

His Glu Arg Met His Arg His Ile Glu Leu Ala Trp Ala Phe Ser Thr  
65 70 75 80

Val Ile Gly Thr Leu Leu Phe Leu Ala Glu Val Val Leu Leu Cys Trp

				85					90					95	
Val	Lys	Phe	Leu	Pro	Leu	Lys	Lys	Gln	Pro	Gly	Gln	Pro	Arg	Pro	Thr
			100					105					110		
Ser	Lys	Pro	Pro	Ala	Ser	Gly	Ala	Ala	Ala	Asn	Val	Ser	Thr	Ser	Gly
		115					120					125			
Ile	Thr	Pro	Gly	Gln	Ala	Ala	Ala	Ile	Ala	Ser	Thr	Thr	Ile	Met	Val
		130					135					140			
Pro	Phe	Gly	Leu	Ile	Phe	Ile	Val	Phe	Ala	Val	His	Phe	Tyr	Arg	Ser
145					150					155					160
Leu	Val	Ser	His	Lys	Thr	Asp	Arg	Gln	Phe	Gln	Glu	Leu	Asn	Glu	Leu
				165					170					175	
Ala	Glu	Phe	Ala	Arg	Leu	Gln	Asp	Gln	Leu	Asp	His	Arg	Gly	Asp	His
			180					185					190		
Pro	Leu	Thr	Pro	Gly	Ser	His	Tyr	Ala							
		195					200								

<210> 1607  
 <211> 23  
 <212> PRT  
 <213> Homo sapiens

<400> 1607  
 Met Ser Ala Cys Thr Ala Thr Ser Ser Trp Pro Gly Pro Ser Pro Pro  
 1 5 10 15  
 Ser Ser Ala Arg Cys Ser Ser  
 20

<210> 1608  
 <211> 219  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (205)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (212)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1608  
 Tyr Phe Ser Val Gly Gln Arg Gln Cys Trp Ile Ser Phe Thr Leu Thr  
 1 5 10 15  
 Ala Gln Asn Ser Ile Cys Cys Leu Pro Cys Asn Leu Arg Thr Asn Thr  
 20 25 30

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<210> 1609
<211> 267
<212> PRT
<213> Homo sapiens
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Met	Leu	Ile	Ala	Val	Gly	Ile	His	Leu	Leu	Leu	Leu	Met	Phe	Glu	Val
1					5				10					15	
Leu	Val	Cys	Asp	Arg	Val	Glu	Arg	Gly	Thr	His	Phe	Trp	Leu	Leu	Val
			20					25					30		
Phe	Met	Pro	Leu	Phe	Phe	Val	Ser	Pro	Val	Ser	Val	Ala	Ala	Cys	Val
		35					40					45			
Trp	Gly	Phe	Arg	His	Asp	Arg	Ser	Leu	Glu	Leu	Glu	Ile	Leu	Cys	Ser
	50					55					60				
Val	Asn	Ile	Leu	Gln	Phe	Ile	Phe	Ile	Ala	Leu	Lys	Leu	Asp	Arg	Ile
65					70					75					80

Ile	His	Trp	Pro	Trp	Leu	Val	Val	Phe	Val	Pro	Leu	Trp	Ile	Leu	Met
				85					90					95	
Ser	Phe	Leu	Cys	Leu	Val	Val	Leu	Tyr	Tyr	Ile	Val	Trp	Ser	Leu	Leu
			100					105					110		
Phe	Leu	Arg	Ser	Leu	Asp	Val	Val	Ala	Glu	Gln	Arg	Arg	Thr	His	Val
		115					120					125			
Thr	Met	Ala	Ile	Ser	Trp	Ile	Thr	Ile	Val	Val	Pro	Leu	Leu	Thr	Phe
	130					135					140				
Glu	Val	Leu	Leu	Val	His	Arg	Leu	Asp	Gly	His	Asn	Thr	Phe	Ser	Tyr
145					150					155					160
Val	Ser	Ile	Phe	Val	Pro	Leu	Trp	Leu	Ser	Leu	Leu	Thr	Leu	Met	Ala
				165					170					175	
Thr	Thr	Phe	Arg	Arg	Lys	Gly	Gly	Asn	His	Trp	Trp	Phe	Gly	Ile	Arg
			180					185					190		
Arg	Asp	Phe	Cys	Gln	Phe	Leu	Leu	Glu	Ile	Phe	Pro	Phe	Leu	Arg	Glu
		195					200					205			
Tyr	Gly	Asn	Ile	Ser	Tyr	Asp	Leu	His	His	Glu	Asp	Ser	Glu	Asp	Ala
	210					215					220				
Glu	Glu	Thr	Ser	Val	Pro	Glu	Ala	Pro	Lys	Ile	Ala	Pro	Ile	Phe	Gly
225					230					235					240
Lys	Lys	Ala	Arg	Val	Val	Ile	Thr	Gln	Ser	Pro	Gly	Lys	Tyr	Val	Pro
				245					250					255	
Pro	Pro	Pro	Lys	Leu	Asn	Ile	Asp	Met	Pro	Asp					
			260					265							

<210> 1610

<211> 123

&lt;212&gt; PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

<222> (92)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 2\bar{2}0 \rangle$ 

<221> SITE

&lt;222&gt; (93)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

<221> SITE

$\langle 222 \rangle$  (108).

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

<221> SITE

&lt;222&gt; (117)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (122)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1610

Met	Ile	Thr	Thr	Ala	Gly	Lys	Val	Val	Val	Thr	Ile	Leu	Leu	Gly	Ser
1				5					10					15	

Ser	Gly	Met	Met	Leu	Pro	Ser	Leu	Thr	Ser	Ser	Val	Tyr	Phe	Phe	Val
			20					25					30		

Phe	Leu	Gly	Leu	Cys	Thr	Trp	Trp	Ser	Trp	Cys	Arg	Thr	Phe	Asp	Pro
		35					40					45			

Leu	Leu	Phe	Ser	Cys	Leu	Cys	Val	Leu	Leu	Ala	Ile	Phe	Thr	Ala	Gly
	50					55					60				

His	Leu	Ile	Gly	Leu	Tyr	Leu	Tyr	Gln	Phe	Gln	Phe	Phe	Gln	Glu	Ala
65					70				75						80

Val	Pro	Pro	Asn	Asp	Tyr	Tyr	Ala	Ser	Phe	Gly	Xaa	Xaa	Glu	Glu	Phe
				85					90					95	

Phe	Tyr	Ser	Thr	Gly	Thr	Glu	Leu	Ile	Ile	Pro	Xaa	Arg	Leu	Leu	Gln
			100					105					110		

Ala	His	His	Asn	Xaa	Thr	Tyr	Lys	Gln	Xaa	Tyr
		115					120			

&lt;210&gt; 1611

&lt;211&gt; 52

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (37)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1611

Pro	Gly	Leu	Arg	Lys	Asn	Arg	Pro	Ser	Val	Pro	Arg	Arg	Ser	Ser	Pro
1				5					10					15	

Gly	Arg	Ile	Ser	Gly	Leu	Ser	Ser	Val	Ala	Trp	Asn	Pro	Asp	His	Ser
			20					25					30		

Ile	Ser	Val	Phe	Xaa	Leu	Ala	Glu	Leu	Thr	Ser	Arg	Ala	Gln	Leu	Ala
		35					40					45			

Val	Gly	Val	Ser
	50		

&lt;210&gt; 1612

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1612

Met Phe Arg Arg Leu Ala Ser Val Ala Ser Lys Leu Lys Glu Phe Ile  
 1 5 10 15

Gly Asn Met Ile Thr Thr Ala Gly Lys Val Val Val Thr Ile Leu Leu  
 20 25 30

Gly Ser Ser Gly Met Met Leu Pro Ser Leu Thr Ser Ser Val Tyr Phe  
 35 40 45

Phe Val Phe Leu Gly Leu Cys Thr Trp Trp Ser Trp Cys Arg Thr Phe  
 50 55 60

Asp Pro Leu Leu Phe Ser Cys Leu Cys Val Leu Leu Ala Ile Phe Thr  
 65 70 75 80

Ala Gly His Leu Ile Gly Leu Tyr Leu Tyr Gln Phe Gln Phe Phe Gln  
 85 90 95

Glu Ala Val Pro Pro Asn Asp Tyr Tyr Ala Ser Phe Gly Gln Ser Glu  
 100 105 110

Glu Phe Phe Tyr Ser Thr Gly Thr Glu Leu Ile Ile Pro  
 115 120 125

&lt;210&gt; 1613

&lt;211&gt; 107

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1613

Met Ile Thr Thr Ala Gly Lys Val Val Val Thr Ile Leu Leu Gly Ser  
 1 5 10 15

Ser Gly Met Met Leu Pro Ser Leu Thr Ser Ser Val Tyr Phe Phe Val  
 20 25 30

Phe Leu Gly Leu Cys Thr Trp Trp Ser Trp Cys Arg Thr Phe Asp Pro  
 35 40 45

Leu Leu Phe Ser Cys Leu Cys Val Leu Leu Ala Ile Phe Thr Ala Gly  
 50 55 60

His Leu Ile Gly Leu Tyr Leu Tyr Gln Phe Gln Phe Phe Gln Glu Ala  
 65 70 75 80

Val Pro Pro Asn Asp Tyr Tyr Ala Ser Phe Gly Gln Ser Glu Glu Phe  
 85 90 95

Phe Tyr Ser Thr Gly Thr Glu Leu Ile Ile Pro  
 100 105

<210> 1614  
 <211> 115  
 <212> PRT  
 <213> Homo sapiens

<400> 1614  
 Met Ala Val Ala Val Leu Leu Cys Gly Cys Ile Val Ala Thr Val Ser  
     1                    5                    10                    15  
 Phe Phe Trp Glu Glu Ser Leu Thr Gln His Val Ala Gly Leu Leu Phe  
             20                    25                    30  
 Leu Met Thr Gly Ile Phe Cys Thr Ile Ser Leu Cys Thr Tyr Ala Ala  
             35                    40                    45  
 Ser Ile Ser Tyr Asp Leu Asn Arg Leu Pro Lys Leu Ile Tyr Ser Leu  
     50                    55                    60  
 Pro Ala Asp Val Glu His Gly Tyr Ser Trp Ser Ile Phe Cys Ala Trp  
     65                    70                    75                    80  
 Cys Ser Leu Gly Phe Ile Val Ala Ala Gly Gly Leu Cys Ile Ala Tyr  
             85                    90                    95  
 Pro Phe Ile Ser Arg Thr Lys Ile Ala Gln Leu Lys Ser Gly Arg Asp  
             100                    105                    110  
 Ser Thr Val  
     115

<210> 1615  
 <211> 182  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (88)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (119)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (120)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (149)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE

&lt;222&gt; (151)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (154)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1615

Met	Val	Ile	Tyr	Val	Thr	Leu	Ala	Leu	Trp	Pro	Gln	Ile	Ile	Gln	Lys
1				5					10					15	

Lys	Ala	Asn	Gly	Asn	Cys	Phe	Trp	His	Phe	Gly	Leu	Leu	Leu	Lys	Leu
		20					25					30			

Gly	Phe	Leu	Leu	Leu	Phe	Ile	Cys	Phe	Leu	Ala	Tyr	Ser	Gln	Gly	Ala
		35					40					45			

Phe	Glu	Lys	Ile	Phe	Ser	Leu	Trp	Pro	Leu	Ser	Lys	Cys	Phe	Glu	Leu
	50					55					60				

Lys	Gly	Asn	Val	Tyr	Glu	Trp	Trp	Phe	Arg	Trp	Arg	Leu	Asp	Arg	Tyr
65					70					75					80

Val	Val	Phe	His	Gly	Met	Leu	Xaa	Ala	Phe	Ile	Tyr	Leu	Ala	Leu	Gln
				85					90					95	

Lys	Arg	Gln	Ile	Leu	Ser	Glu	Gly	Lys	Gly	Glu	Pro	Leu	Phe	Ser	Asn
		100						105					110		

Lys	Ile	Ser	Asn	Phe	Leu	Xaa	Xaa	Ile	Ser	Val	Val	Ser	Phe	Leu	Thr
		115					120						125		

Tyr	Ser	Ile	Trp	Ala	Ser	Ser	Cys	Lys	Asn	Lys	Ala	Glu	Cys	Asn	Glu
	130					135					140				

Leu	His	Pro	Ser	Xaa	Ser	Xaa	Val	Gln	Xaa	Leu	Ala	Phe	Ile	Leu	Ile
145					150					155				160	

Arg	Asn	Ile	Pro	Gly	Tyr	Ala	Arg	Gln	Phe	Thr	Val	His	Phe	Leu	Leu
				165				170						175	

Gly	Leu	Glu	Lys	Phe	His
			180		

&lt;210&gt; 1616

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (17)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (18)



<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1616

Ile Trp Ala Ile Asp Val Phe Ala Phe Cys Leu Ile Phe Phe Tyr Lys  
1 5 10 15

Xaa Xaa Val Arg Gly Ile His Leu Phe Ile Cys Cys Thr Asp Leu Ile  
20 25 30

Met Ile Leu Met Phe Glu Arg Leu His Leu Phe Ala Phe Thr Ile Cys  
35 40 45

Gly Val Lys Tyr Ile Phe Cys Ser Gln Tyr Met Lys Ile Trp Ser Asn  
50 55 60

Leu Asn Ser Lys Gln Thr Phe Cys Gly Cys Leu Phe Leu Tyr Trp Gln  
65 70 75 80

Ser Ile Asn

<210> 1617

<211> 182

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (119)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (120)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (149)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (151)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (154)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1617

Met Val Ile Tyr Val Thr Leu Ala Leu Trp Pro Gln Ile Ile Gln Lys  
1 5 10 15

Lys Ala Asn Gly Asn Cys Phe Trp His Phe Gly Leu Leu Leu Lys Leu  
20 25 30

[illegible]

```
<210> 1618
<211> 95
<212> PRT
<213> Homo sapiens
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<400> 1618

Met	Arg	Ser	Gln	His	Ile	Thr	Trp	Cys	Leu	Leu	Phe	Ser	Ser	Pro	Leu
1				5					10					15	
Ala	Thr	Leu	Pro	Ala	Ala	Leu	Pro	Leu	Gly	Ala	Cys	Ala	Ala	Val	Phe
			20					25					30		
Thr	Val	Ile	Gly	Ser	Glu	Lys	Gln	Ser	Glu	Cys	Ser	Leu	Leu	Arg	Glu
		35					40					45			
Ser	Arg	Ala	Lys	Tyr	His	Gly	Cys	Thr	His	Gly	Gln	Ile	Ser	Ser	Ser
	50					55					60				
Leu	Lys	Gln	His	Pro	Arg	Trp	Met	Tyr	Ser	His	Gln	Glu	Asp	Leu	Lys
65					70					75					80
Val	Trp	Ser	Leu	Val	Glu	Lys	Lys	Gln	Lys	Gln	Cys	Met	Gly	Asp	
				85					90					95	

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<210> 1619
<211> 95
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&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1619

```

Met Arg Ser Gln His Ile Thr Trp Cys Leu Leu Phe Ser Ser Pro Leu
 1              5              10              15

Ala Thr Leu Pro Ala Ala Leu Pro Leu Gly Ala Cys Ala Ala Val Phe
              20              25              30

Thr Val Ile Gly Ser Glu Lys Gln Ser Glu Cys Ser Leu Leu Arg Glu
      35              40              45

Ser Arg Ala Lys Tyr His Gly Cys Thr His Gly Gln Ile Ser Ser Ser
      50              55              60

Leu Lys Gln His Pro Arg Trp Met Tyr Ser His Gln Glu Asp Leu Lys
      65              70              75              80

Val Trp Ser Leu Val Glu Lys Lys Gln Lys Gln Cys Met Gly Asp
      85              90              95

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&lt;210&gt; 1620

&lt;211&gt; 706

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1620

```

Met Leu His Ala Leu Gln His Pro Cys Ile Val Ala Leu Ile Gly Ile
 1              5              10              15

Ser Ile His Pro Leu Cys Phe Ala Leu Glu Leu Ala Pro Leu Ser Ser
      20              25              30

Leu Asn Thr Val Leu Ser Glu Asn Ala Arg Asp Ser Ser Phe Ile Pro
      35              40              45

Leu Gly His Met Leu Thr Gln Lys Ile Ala Tyr Gln Ile Ala Ser Gly
      50              55              60

Leu Ala Tyr Leu His Lys Lys Asn Ile Ile Phe Cys Asp Leu Lys Ser
      65              70              75              80

Asp Asn Ile Leu Val Trp Ser Leu Asp Val Lys Glu His Ile Asn Ile
      85              90              95

Lys Leu Ser Asp Tyr Gly Ile Ser Arg Gln Ser Phe His Glu Gly Ala
      100              105              110

Leu Gly Val Glu Gly Thr Pro Gly Tyr Gln Ala Pro Glu Ile Arg Pro
      115              120              125

Arg Ile Val Tyr Asp Glu Lys Val Asp Met Phe Ser Tyr Gly Met Val
      130              135              140

Leu Tyr Glu Leu Leu Ser Gly Gln Arg Pro Ala Leu Gly His His Gln
      145              150              155              160

```

Leu Gln Ile Ala Lys Lys Leu Ser Lys Gly Ile Arg Pro Val Leu Gly  
 165 170 175  
 Gln Pro Glu Glu Val Gln Phe Arg Arg Leu Gln Ala Leu Met Met Glu  
 180 185 190  
 Cys Trp Asp Thr Lys Pro Glu Lys Arg Pro Leu Ala Leu Ser Val Val  
 195 200 205  
 Ser Gln Met Lys Asp Pro Thr Phe Ala Thr Phe Met Tyr Glu Leu Cys  
 210 215 220  
 Cys Gly Lys Gln Thr Ala Phe Phe Ser Ser Gln Gly Gln Glu Tyr Thr  
 225 230 235 240  
 Val Val Phe Trp Asp Gly Lys Glu Glu Ser Arg Asn Tyr Thr Val Val  
 245 250 255  
 Asn Thr Glu Lys Gly Leu Met Glu Val Gln Arg Met Cys Cys Pro Gly  
 260 265 270  
 Met Lys Val Ser Cys Gln Leu Gln Val Gln Arg Ser Leu Trp Thr Ala  
 275 280 285  
 Thr Glu Asp Gln Lys Ile Tyr Ile Tyr Thr Leu Lys Gly Met Cys Pro  
 290 295 300  
 Leu Asn Thr Pro Gln Gln Ala Leu Asp Thr Pro Ala Val Val Thr Cys  
 305 310 315 320  
 Phe Leu Ala Val Pro Val Ile Lys Lys Asn Ser Tyr Leu Val Leu Ala  
 325 330 335  
 Gly Leu Ala Asp Gly Leu Val Ala Val Phe Pro Val Val Arg Gly Thr  
 340 345 350  
 Pro Lys Asp Ser Cys Ser Tyr Leu Cys Ser His Thr Ala Asn Arg Ser  
 355 360 365  
 Lys Phe Ser Ile Ala Asp Glu Asp Ala Arg Gln Asn Pro Tyr Pro Val  
 370 375 380  
 Lys Ala Met Glu Val Val Asn Ser Gly Ser Glu Val Trp Tyr Ser Asn  
 385 390 395 400  
 Gly Pro Gly Leu Leu Val Ile Asp Cys Ala Ser Leu Glu Ile Cys Arg  
 405 410 415  
 Arg Leu Glu Pro Tyr Met Ala Pro Ser Met Val Thr Ser Val Val Cys  
 420 425 430  
 Ser Ser Glu Gly Arg Gly Glu Glu Val Val Trp Cys Leu Asp Asp Lys  
 435 440 445  
 Ala Asn Ser Leu Val Met Tyr His Ser Thr Thr Tyr Gln Leu Cys Ala  
 450 455 460  
 Arg Tyr Phe Cys Gly Val Pro Ser Pro Leu Arg Asp Met Phe Pro Val  
 465 470 475 480

Arg Pro Leu Asp Thr Glu Pro Pro Ala Ala Ser His Thr Ala Asn Pro.  
 485 490 495  
 Lys Val Pro Glu Gly Asp Ser Ile Ala Asp Val Ser Ile Met Tyr Ser  
 500 505 510  
 Glu Glu Leu Gly Thr Gln Ile Leu Ile His Gln Glu Ser Leu Thr Asp  
 515 520 525  
 Tyr Cys Ser Met Ser Ser Tyr Ser Ser Ser Pro Pro Arg Gln Ala Ala  
 530 535 540  
 Arg Ser Pro Ser Ser Leu Pro Ser Ser Pro Ala Ser Ser Ser Ser Val  
 545 550 555 560  
 Pro Phe Ser Thr Asp Cys Glu Asp Ser Asp Met Leu His Thr Pro Gly  
 565 570 575  
 Ala Ala Ser Asp Arg Ser Glu His Asp Leu Thr Pro Met Asp Gly Glu  
 580 585 590  
 Thr Phe Ser Gln His Leu Gln Ala Val Lys Ile Leu Ala Val Arg Asp  
 595 600 605  
 Leu Ile Trp Val Pro Arg Arg Gly Gly Asp Val Ile Val Ile Gly Leu  
 610 615 620  
 Glu Lys Asp Ser Glu Ala Gln Arg Gly Arg Val Ile Ala Val Leu Lys  
 625 630 635 640  
 Ala Arg Glu Leu Thr Pro His Gly Val Leu Val Asp Ala Ala Val Val  
 645 650 655  
 Ala Lys Asp Thr Val Val Cys Thr Phe Glu Asn Glu Asn Thr Glu Trp  
 660 665 670  
 Cys Leu Ala Val Trp Arg Gly Trp Gly Ala Arg Glu Phe Asp Ile Phe  
 675 680 685  
 Tyr Gln Ser Tyr Glu Glu Leu Gly Arg Leu Glu Ala Cys Thr Arg Lys  
 690 695 700  
 Arg Arg  
 705

&lt;210&gt; 1621

&lt;211&gt; 706

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1621

Met Leu His Ala Leu Gln His Pro Cys Ile Val Ala Leu Ile Gly Ile  
 1 5 10 15

Ser Ile His Pro Leu Cys Phe Ala Leu Glu Leu Ala Pro Leu Ser Ser  
 20 25 30

Leu Asn Thr Val Leu Ser Glu Asn Ala Arg Asp Ser Ser Phe Ile Pro

35					40					45					
Leu	Gly	His	Met	Leu	Thr	Gln	Lys	Ile	Ala	Tyr	Gln	Ile	Ala	Ser	Gly
50						55					60				
Leu	Ala	Tyr	Leu	His	Lys	Lys	Asn	Ile	Ile	Phe	Cys	Asp	Leu	Lys	Ser
65					70					75					80
Asp	Asn	Ile	Leu	Val	Trp	Ser	Leu	Asp	Val	Lys	Glu	His	Ile	Asn	Ile
				85					90					95	
Lys	Leu	Ser	Asp	Tyr	Gly	Ile	Ser	Arg	Gln	Ser	Phe	His	Glu	Gly	Ala
			100					105					110		
Leu	Gly	Val	Glu	Gly	Thr	Pro	Gly	Tyr	Gln	Ala	Pro	Glu	Ile	Arg	Pro
		115					120					125			
Arg	Ile	Val	Tyr	Asp	Glu	Lys	Val	Asp	Met	Phe	Ser	Tyr	Gly	Met	Val
	130					135					140				
Leu	Tyr	Glu	Leu	Leu	Ser	Gly	Gln	Arg	Pro	Ala	Leu	Gly	His	His	Gln
145					150					155					160
Leu	Gln	Ile	Ala	Lys	Lys	Leu	Ser	Lys	Gly	Ile	Arg	Pro	Val	Leu	Gly
				165					170					175	
Gln	Pro	Glu	Glu	Val	Gln	Phe	Arg	Arg	Leu	Gln	Ala	Leu	Met	Met	Glu
			180					185					190		
Cys	Trp	Asp	Thr	Lys	Pro	Glu	Lys	Arg	Pro	Leu	Ala	Leu	Ser	Val	Val
		195					200					205			
Ser	Gln	Met	Lys	Asp	Pro	Thr	Phe	Ala	Thr	Phe	Met	Tyr	Glu	Leu	Cys
	210					215					220				
Cys	Gly	Lys	Gln	Thr	Ala	Phe	Phe	Ser	Ser	Gln	Gly	Gln	Glu	Tyr	Thr
225					230					235					240
Val	Val	Phe	Trp	Asp	Gly	Lys	Glu	Glu	Ser	Arg	Asn	Tyr	Thr	Val	Val
				245					250					255	
Asn	Thr	Glu	Lys	Gly	Leu	Met	Glu	Val	Gln	Arg	Met	Cys	Cys	Pro	Gly
			260				265						270		
Met	Lys	Val	Ser	Cys	Gln	Leu	Gln	Val	Gln	Arg	Ser	Leu	Trp	Thr	Ala
		275					280					285			
Thr	Glu	Asp	Gln	Lys	Ile	Tyr	Ile	Tyr	Thr	Leu	Lys	Gly	Met	Cys	Pro
	290					295					300				
Leu	Asn	Thr	Pro	Gln	Gln	Ala	Leu	Asp	Thr	Pro	Ala	Val	Val	Thr	Cys
305					310					315					320
Phe	Leu	Ala	Val	Pro	Val	Ile	Lys	Lys	Asn	Ser	Tyr	Leu	Val	Leu	Ala
				325					330					335	
Gly	Leu	Ala	Asp	Gly	Leu	Val	Ala	Val	Phe	Pro	Val	Val	Arg	Gly	Thr
			340					345					350		
Pro	Lys	Asp	Ser	Cys	Ser	Tyr	Leu	Cys	Ser	His	Thr	Ala	Asn	Arg	Ser

355	360	365
Lys Phe Ser Ile Ala Asp Glu Asp Ala Arg Gln Asn Pro Tyr Pro Val		
370	375	380
Lys Ala Met Glu Val Val Asn Ser Gly Ser Glu Val Trp Tyr Ser Asn		
385	390	395
Gly Pro Gly Leu Leu Val Ile Asp Cys Ala Ser Leu Glu Ile Cys Arg		
	405	410
Arg Leu Glu Pro Tyr Met Ala Pro Ser Met Val Thr Ser Val Val Cys		
	420	425
Ser Ser Glu Gly Arg Gly Glu Glu Val Val Trp Cys Leu Asp Asp Lys		
	435	440
Ala Asn Ser Leu Val Met Tyr His Ser Thr Thr Tyr Gln Leu Cys Ala		
	450	455
Arg Tyr Phe Cys Gly Val Pro Ser Pro Leu Arg Asp Met Phe Pro Val		
465	470	475
Arg Pro Leu Asp Thr Glu Pro Pro Ala Ala Ser His Thr Ala Asn Pro		
	485	490
Lys Val Pro Glu Gly Asp Ser Ile Ala Asp Val Ser Ile Met Tyr Ser		
	500	505
Glu Glu Leu Gly Thr Gln Ile Leu Ile His Gln Glu Ser Leu Thr Asp		
	515	520
Tyr Cys Ser Met Ser Ser Tyr Ser Ser Ser Pro Pro Arg Gln Ala Ala		
	530	535
Arg Ser Pro Ser Ser Leu Pro Ser Ser Pro Ala Ser Ser Ser Ser Val		
545	550	555
Pro Phe Ser Thr Asp Cys Glu Asp Ser Asp Met Leu His Thr Pro Gly		
	565	570
Ala Ala Ser Asp Arg Ser Glu His Asp Leu Thr Pro Met Asp Gly Glu		
	580	585
Thr Phe Ser Gln His Leu Gln Ala Val Lys Ile Leu Ala Val Arg Asp		
	595	600
Leu Ile Trp Val Pro Arg Arg Gly Gly Asp Val Ile Val Ile Gly Leu		
	610	615
Glu Lys Asp Ser Gly Ala Gln Arg Gly Arg Val Ile Ala Val Leu Lys		
625	630	635
Ala Arg Glu Leu Thr Pro His Gly Val Leu Val Asp Ala Ala Val Val		
	645	650
Ala Lys Asp Thr Val Val Cys Thr Phe Glu Asn Glu Asn Thr Glu Trp		
	660	665
Cys Leu Ala Val Trp Arg Gly Trp Gly Ala Arg Glu Phe Asp Ile Phe		

675

680

685

Tyr Gln Ser Tyr Glu Glu Leu Gly Arg Leu Glu Ala Cys Thr Arg Lys  
 690 695 700

Arg Arg  
 705

&lt;210&gt; 1622

&lt;211&gt; 196

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (171)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (175)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (177)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (181)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (185)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (188)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (189)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (193)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1622

Met Ser Leu Leu Val Asp Gly Asp Met Asn Leu Ser Ile Ile Met Thr  
 1 5 10 15

Ile Ser Ser Thr Leu Leu Ala Leu Val Leu Met Pro Leu Cys Leu Trp



20 25 30  
 Ile Tyr Ser Trp Ala Trp Ile Asn Thr Pro Ile Val Gln Leu Leu Pro  
 35 40 45  
 Leu Gly Thr Val Thr Leu Thr Leu Cys Ser Thr Leu Ile Pro Ile Gly  
 50 55 60  
 Leu Gly Val Phe Ile Arg Tyr Lys Tyr Ser Arg Val Ala Asp Tyr Ile  
 65 70 75 80  
 Val Lys Val Ser Leu Trp Ser Leu Leu Val Thr Leu Val Val Leu Phe  
 85 90 95  
 Ile Met Thr Gly Thr Met Leu Gly Pro Glu Leu Leu Ala Ser Ile Pro  
 100 105 110  
 Ala Ala Val Tyr Val Ile Ala Ile Phe Met Pro Leu Ala Gly Tyr Ala  
 115 120 125  
 Ser Gly Tyr Gly Leu Ala Thr Leu Phe His Leu Pro Pro Asn Cys Lys  
 130 135 140  
 Arg Thr Val Cys Leu Glu Thr Gly Ser Gln Asn Val Gln Leu Cys Thr  
 145 150 155 160  
 Ala Ile Leu Lys Leu Ala Phe His Arg Ile Xaa Arg Lys His Xaa His  
 165 170 175  
 Xaa Ser Phe Ala Xaa Cys Thr Phe Xaa Val Cys Xaa Xaa Gly Asp Phe  
 180 185 190  
 Xaa Phe Asn Leu  
 195

<210> 1623  
 <211> 69  
 <212> PRT  
 <213> Homo sapiens

<400> 1623  
 Met Asp Phe Asn Leu Gly Leu Pro Gly Ala Gly Pro Pro Arg Leu Leu  
 1 5 10 15  
 Arg Leu Gly Leu Cys Val Leu Ala Leu Ala Cys Phe Arg Cys Leu Thr  
 20 25 30  
 Gly Leu Phe Leu Phe Met Ala Trp Leu His Ser Asp Leu Gly Trp Gly  
 35 40 45  
 His Ile Gln Pro Thr Ala His Trp Leu Ser Val Trp Pro Ala Pro Arg  
 50 55 60  
 Phe Gln Pro Gln Trp  
 65

<210> 1624  
 <211> 199  
 <212> PRT  
 <213> Homo sapiens

<400> 1624

```

Phe Ser Gly Val Cys Phe Ala Gly Ile Ala Gly Ser Met Ala Thr Leu
 1             5             10             15

Leu His Asp Ala Val Met Asn Pro Ala Glu Val Val Lys Gln Arg Leu
             20             25             30

Gln Met Tyr Asn Ser Gln His Arg Ser Ala Ile Ser Cys Ile Arg Thr
             35             40             45

Val Trp Arg Thr Glu Gly Leu Gly Ala Phe Tyr Arg Ser Tyr Thr Thr
             50             55             60

Gln Leu Thr Met Asn Ile Pro Phe Gln Ser Ile His Phe Ile Thr Tyr
             65             70             75             80

Glu Phe Leu Gln Glu Gln Val Asn Pro His Arg Thr Tyr Asn Pro Gln
             85             90             95

Ser His Ile Ile Ser Gly Gly Leu Ala Gly Ala Leu Ala Ala Ala
             100             105             110

Thr Thr Pro Leu Asp Val Cys Lys Thr Leu Leu Asn Thr Gln Glu Asn
             115             120             125

Val Ala Leu Ser Leu Ala Asn Ile Ser Gly Arg Leu Ser Gly Met Ala
             130             135             140

Asn Ala Phe Arg Thr Val Tyr Gln Leu Asn Gly Leu Ala Gly Tyr Phe
             145             150             155             160

Lys Gly Ile Gln Ala Arg Val Ile Tyr Gln Met Pro Ser Thr Ala Ile
             165             170             175

Ser Trp Ser Val Tyr Glu Phe Phe Lys Tyr Phe Leu Thr Lys Arg Gln
             180             185             190

Leu Glu Asn Arg Ala Pro Tyr
             195
  
```

<210> 1625  
 <211> 69  
 <212> PRT  
 <213> Homo sapiens

<400> 1625

```

Met Asp Phe Asn Leu Gly Leu Pro Gly Ala Gly Pro Pro Arg Leu Leu
 1             5             10             15

Arg Leu Gly Leu Cys Val Leu Ala Leu Ala Cys Phe Arg Cys Leu Thr
             20             25             30

Gly Leu Phe Leu Phe Met Ala Trp Leu His Ser Asp Leu Gly Trp Gly
             1012
  
```

35

40

45

His Ile Gln Pro Thr Ala His Trp Leu Ser Val Trp Pro Ala Pro Arg  
 50 55 60

Phe Gln Pro Gln Trp  
 65

&lt;210&gt; 1626

&lt;211&gt; 91

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (84)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1626

Met Ala Arg Val Leu Gln Leu Glu Pro Gln Thr Ser Ala Cys Leu Leu  
 1 5 10 15

Ser Leu Leu Cys Pro Ala Leu Gln Glu Pro Gly Pro Ala Ser Gly Thr  
 20 25 30

Glu Ser Ala His Phe Leu Arg Ala His Ser Arg Cys Gly Pro Gly Leu  
 35 40 45

Pro Pro Pro His Val Ser Ser Pro Gln Pro Thr Pro Pro Gly Pro Glu  
 50 55 60

Ala Lys Val Arg Gly Cys Met Gly Ala Arg Trp Trp Leu Gly Arg Ala  
 65 70 75 80

Pro Gly Val Xaa Gly Val Phe Arg Asp Thr Thr  
 85 90

&lt;210&gt; 1627

&lt;211&gt; 137

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (15)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (39)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1627

Ala His Cys His Ile Ser Arg Ser His Cys Pro Thr Leu Arg Xaa Lys  
 1 5 10 15

Asp	Thr	Cys	Gly	Gly	Trp	Glu	Pro	Thr	Ser	Ala	Leu	Gly	Ser	Thr	
			20					25					30		
Leu	Ser	His	Val	Pro	His	Xaa	Leu	Leu	Glu	Arg	Arg	Asp	Leu	Trp	Arg
		35					40					45			
Arg	Glu	Ala	Glu	Ala	Arg	Lys	Gln	Ser	Gln	Pro	Asp	Pro	Ala	Met	Pro
	50					55					60				
Pro	Gly	His	Thr	Arg	Met	Pro	Glu	Asn	Gln	Arg	Leu	Glu	Thr	Leu	Thr
65					70					75					80
Lys	Leu	Leu	Gln	Ser	Gln	Ser	Gln	Leu	Leu	Arg	Glu	Leu	Val	Leu	Leu
				85					90					95	
Pro	Ala	Gly	Ala	Asp	Ser	Leu	Arg	Ala	Gln	Ser	His	Arg	Ala	Glu	Leu
			100					105					110		
Asp	Arg	Lys	Leu	Val	Gln	Val	Glu	Glu	Ala	Ile	Lys	Ile	Phe	Ser	Arg
		115					120					125			
Pro	Lys	Val	Phe	Val	Lys	Met	Asp	Asp							
	130					135									

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<210> 1628
<211> 95
<212> PRT
<213> Homo sapiens
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<400> 1628

Met	Ala	Trp	Ala	Pro	Ala	Cys	Val	Gln	Ala	Gln	Gly	Leu	Ser	Cys	Leu	
1				5					10					15		
Cys	Leu	Phe	Pro	Asp	Pro	Ser	Ser	Cys	Arg	Glu	Trp	Cys	Cys	Pro	Leu	
			20					25					30			
Gly	Met	Tyr	Leu	Gln	Val	Glu	Thr	Arg	Thr	Ser	Ser	Arg	Leu	His	Leu	
		35					40					45				
Lys	Arg	Ala	Pro	Gly	Ile	Arg	Ser	Trp	Ser	Leu	Leu	Val	Gly	Lys	Ala	
	50					55					60					
Leu	His	Val	Pro	Pro	Gln	Asn	Pro	Arg	Thr	Gly	Ser	Leu	Thr	Phe	Lys	
65					70					75					80	
Lys	Asp	Glu	Asn	Glu	Thr	Lys	Tyr	Phe	Leu	Phe	Phe	Leu	Leu	Pro		
				85					90					95		

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<210> 1629
<211> 189
<212> PRT
<213> Homo sapiens
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<220>  
<221> SITE  
<222> (81)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (163)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1629

Val Gln Leu Ser Val Pro Ala Gly Met Leu His Ser Leu Cys Val Gln  
1 5 10 15

Leu Phe Ile Thr Ala Gly Ser Leu Cys Ala Thr His Ser Gln Cys Leu  
20 25 30

Ser Lys Ala Asp Gly Ala Arg Pro Ser Ile Leu Tyr Leu Thr Cys Pro  
35 40 45

Leu His Ser Pro Ile Lys Asn Gly Pro Gln Ile Arg Val Glu Glu Ala  
50 55 60

Asp Val Ser Ser Ser Glu Thr Ala Leu Pro Arg Ser Arg Arg Asp Gly  
65 70 75 80

Xaa Ala Lys Pro Gly Cys Glu Thr Gly Cys Cys Met Trp Leu Gln Ala  
85 90 95

Leu Asn Ile Val Thr Trp Arg Leu Pro Gln His Ile Val Arg Ser Lys  
100 105 110

Pro Gln Glu Pro Glu Gln Gln Asn Ser Cys His Pro Gln Lys Pro Ala  
115 120 125

Pro Gly Thr Ala Val Gln Ile Gly Arg Arg Ser Ser Gln Gln Trp Leu  
130 135 140

Leu Arg Thr Pro Leu Thr Gln Gln Arg Ser Pro Asp Ala Cys Arg Ser  
145 150 155 160

Pro Glu Xaa Ala Leu Ser Ala Leu Asp Met Ala Gly Asp Thr Gln Val  
165 170 175

Trp Pro Ser Gln Ser Leu Phe Ala Lys Leu Lys Val Lys  
180 185

<210> 1630

<211> 95

<212> PRT

<213> Homo sapiens

<400> 1630

Met Ala Trp Ala Pro Ala Cys Val Gln Ala Gln Gly Leu Ser Cys Leu  
1 5 10 15

Cys Leu Phe Pro Asp Pro Ser Ser Cys Arg Glu Trp Cys Cys Pro Leu  
20 25 30

Gly Met Tyr Leu Gln Val Glu Thr Arg Thr Ser Ser Arg Leu His Leu  
35 40 45

Lys Arg Ala Pro Gly Ile Arg Ser Trp Ser Leu Leu Val Gly Lys Ala  
50 55 60

Leu His Val Pro Pro Gln Asn Pro Arg Thr Gly Ser Leu Thr Phe Lys  
65 70 75 80

Lys Asp Glu Asn Glu Thr Lys Tyr Phe Leu Phe Phe Leu Leu Pro  
85 90 95

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<210> 1631
<211> 303
<212> PRT
<213> Homo sapiens
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<220>
<221> SITE
<222> (224)
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (245)
<223> Xaa equals any of the naturally occurring L-amino acids

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<220>
<221> SITE
<222> (250)
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (252)
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (255)
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (256)
<223> Xaa equals any of the naturally occurring L-amino acids

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<220>
<221> SITE
<222> (257)
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (287)
<223> Xaa equals any of the naturally occurring L-amino acids

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<220>  
<221> SITE  
<222> (301)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1631

Met	Ala	Ala	Ala	Ser	Ala	Gly	Ala	Thr	Arg	Leu	Leu	Leu	Leu	Leu	Leu	
1				5					10						15	
Met	Ala	Val	Ala	Ala	Pro	Ser	Arg	Ala	Arg	Gly	Ser	Gly	Cys	Arg	Ala	
		20						25					30			
Gly	Thr	Gly	Ala	Arg	Gly	Ala	Gly	Ala	Glu	Gly	Arg	Glu	Gly	Glu	Ala	
		35					40					45				
Cys	Gly	Thr	Val	Gly	Leu	Leu	Leu	Glu	His	Ser	Phe	Glu	Ile	Asp	Asp	
	50					55					60					
Ser	Ala	Asn	Phe	Arg	Lys	Arg	Gly	Ser	Leu	Leu	Trp	Asn	Gln	Gln	Asp	
	65				70					75					80	
Gly	Thr	Leu	Ser	Leu	Ser	Gln	Arg	Gln	Leu	Ser	Glu	Glu	Glu	Arg	Gly	
			85						90						95	
Arg	Leu	Arg	Asp	Val	Ala	Ala	Leu	Asn	Gly	Leu	Tyr	Arg	Val	Arg	Ile	
			100					105						110		
Pro	Arg	Arg	Pro	Gly	Ala	Leu	Asp	Gly	Leu	Glu	Ala	Gly	Gly	Tyr	Val	
		115					120					125				
Ser	Ser	Phe	Val	Pro	Ala	Cys	Ser	Leu	Val	Glu	Ser	His	Leu	Ser	Asp	
	130					135					140					
Gln	Leu	Thr	Leu	His	Val	Asp	Val	Ala	Gly	Asn	Val	Val	Gly	Val	Ser	
	145				150					155					160	
Val	Val	Thr	His	Pro	Gly	Gly	Cys	Arg	Gly	His	Glu	Val	Glu	Asp	Val	
				165					170					175		
Asp	Leu	Glu	Leu	Phe	Asn	Thr	Ser	Val	Gln	Leu	Gln	Pro	Pro	Thr	Thr	
			180					185						190		
Ala	Pro	Gly	Pro	Glu	Thr	Ala	Ala	Phe	Ile	Glu	Arg	Leu	Glu	Met	Glu	
		195					200						205			
Gln	Ala	Gln	Lys	Ala	Lys	Asn	Pro	Gln	Glu	Gln	Lys	Ser	Phe	Phe	Xaa	
	210					215					220					
Lys	Tyr	Trp	Met	Tyr	Ile	Ile	Pro	Val	Val	Leu	Phe	Leu	Met	Met	Ser	
	225				230					235					240	
Gly	Ala	Pro	Asp	Xaa	Gly	Gly	Gln	Gly	Xaa	Gly	Xaa	Gly	Gly	Xaa	Xaa	
				245					250					255		
Xaa	Gly	Val	Val	Ala	Gly	Glu	Gly	Pro	Ser	Leu	Ser	Ala	Phe	Pro	Ser	
			260					265					270			
Cys	Lys	Thr	Gln	Gly	Gly	Phe	Pro	Phe	Cys	Leu	Glu	Phe	Pro	Xaa	Cys	
		275					280					285				
Ser	Ser	Ser	Pro	Ser	Pro	Lys	Lys	Gly	Phe	Cys	Leu	Xaa	Pro	Leu		
	290					295						300				

<210> 1632  
 <211> 173  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (99)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (118)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (141)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (164)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (170)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (172)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (173)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1632  
 Met Ala Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu Leu  
     1                    5                    10                    15

Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys Arg Ala  
                     20                    25                    30

Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu Gly Glu Ala  
             35                    40                    45

Cys Gly Thr Val Gly Leu Leu Leu Glu His Ser Phe Glu Ile Asp Asp  
     50                    55                    60

Ser Ala Asn Phe Arg Lys Arg Gly Ser Leu Leu Trp Asn Gln Gln Asp  
     65                    70                    75                    80

Gly Thr Leu Ser Leu Ser Gln Arg Gln Leu Ser Glu Glu Glu Arg Gly  
                     85                    90                    95



Arg Leu Xaa Asp Val Ala Ala Leu Asn Gly Leu Tyr Arg Val Arg Ile  
 100 105 110

Pro Arg Arg Pro Gly Xaa Leu Asp Gly Leu Glu Ala Gly Gly Tyr Val  
 115 120 125

Ser Ser Phe Val Pro Ala Cys Ser Leu Val Glu Ser Xaa Leu Ser Asp  
 130 135 140

Gln Leu Thr Leu His Val Asp Val Ala Gly Asn Val Val Gly Arg Val  
 145 150 155 160

Gly Gly Asp Xaa Pro Trp Gly Cys Arg Xaa His Xaa Xaa  
 165 170

<210> 1633  
 <211> 158  
 <212> PRT  
 <213> Homo sapiens

<400> 1633  
 Met Ala Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu Leu  
 1 5 10 15

Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys Arg Ala  
 20 25 30

Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu Gly Glu Ala  
 35 40 45

Cys Gly Thr Val Gly Leu Leu Leu Glu His Ser Phe Glu Ile Asp Asp  
 50 55 60

Ser Ala Asn Phe Arg Lys Arg Gly Ser Leu Leu Trp Asn Gln Gln Asp  
 65 70 75 80

Gly Thr Leu Ser Leu Ser Gln Arg Gln Leu Ser Glu Glu Glu Arg Gly  
 85 90 95

Arg Leu Arg Asp Val Ala Ala Ser Tyr Leu Asp Cys Gly Ala Thr Arg  
 100 105 110

Ala Cys Gly Pro Leu Leu Cys Ala Thr Leu Pro Val Ser Leu Phe Lys  
 115 120 125

Asn Ile Asp Asp Thr Leu Lys Cys Val Asn Val Leu Lys Ser Tyr Ser  
 130 135 140

Phe Gln Gln Pro Lys Ala Thr Val Val Leu Ala Arg Arg Ser  
 145 150 155

<210> 1634  
 <211> 158  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1634

Met Ala Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu Leu  
 1 5 10 15

Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys Arg Ala  
 20 25 30

Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu Gly Glu Ala  
 35 40 45

Cys Gly Thr Val Gly Leu Leu Leu Glu His Ser Phe Glu Ile Asp Asp  
 50 55 60

Ser Ala Asn Phe Arg Lys Arg Gly Ser Leu Leu Trp Asn Gln Gln Asp  
 65 70 75 80

Gly Thr Leu Ser Leu Ser Gln Arg Gln Leu Ser Glu Glu Glu Arg Gly  
 85 90 95

Arg Leu Arg Asp Val Ala Ala Ser Tyr Leu Asp Cys Gly Ala Thr Arg  
 100 105 110

Ala Cys Gly Pro Leu Leu Cys Ala Thr Leu Pro Val Ser Leu Phe Lys  
 115 120 125

Asn Ile Asp Asp Thr Leu Lys Cys Val Asn Val Leu Lys Ser Tyr Ser  
 130 135 140

Phe Gln Gln Pro Lys Ala Thr Val Val Leu Ala Arg Arg Ser  
 145 150 155

&lt;210&gt; 1635

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1635

Met Arg Ser Arg Lys Ile Pro Gln Gln Ser Arg Phe Phe Thr Pro Leu  
 1 5 10 15

Phe Phe Leu Asn Leu Pro Ile Leu Val Val Pro Leu Pro Ser Thr Asp  
 20 25 30

Thr Ser Cys Ser Asp Phe Gln Tyr Gln Val Phe Lys Thr Ser Tyr Pro  
 35 40 45

Pro Ser Ser Val Pro Pro Ser Leu Gln Ser His Lys His Trp Cys Ser  
 50 55 60

Gln Ile Lys Ile Ser Pro Lys Gln Cys Gln Arg Asp Pro Leu Ser Ser  
 65 70 75 80

Phe Gln Ala Arg Asp Met Phe Ser Phe Gln Val Leu Glu Lys Thr Gly  
 85 90 95

Ser Met Phe Thr Trp Asn Phe Ser Arg Gly Gly Ala Ile Ser Phe Cys  
 100 105 110

Ile Lys Leu  
115

<210> 1636  
<211> 115  
<212> PRT  
<213> Homo sapiens

<400> 1636  
Met Arg Ser Arg Lys Ile Pro Gln Gln Ser Arg Phe Phe Thr Pro Leu  
1 5 10 15  
Phe Phe Leu Asn Leu Pro Ile Leu Val Val Pro Leu Pro Ser Thr Asp  
20 25 30  
Thr Ser Cys Ser Asp Phe Gln Tyr Gln Val Phe Lys Thr Ser Tyr Pro  
35 40 45  
Pro Ser Ser Val Pro Pro Ser Leu Gln Ser His Lys His Trp Cys Ser  
50 55 60  
Gln Ile Lys Ile Ser Pro Lys Gln Cys Gln Arg Asp Pro Leu Ser Ser  
65 70 75 80  
Phe Gln Ala Arg Asp Met Phe Ser Phe Gln Val Leu Glu Lys Thr Gly  
85 90 95  
Ser Met Phe Thr Trp Asn Phe Ser Arg Gly Gly Ala Ile Ser Phe Cys  
100 105 110

Ile Lys Leu  
115

<210> 1637  
<211> 80  
<212> PRT  
<213> Homo sapiens

<400> 1637  
Met Ala Leu Gly Ser Met Tyr Leu Val Leu Thr Leu Ile Val Ala Lys  
1 5 10 15  
Val Leu Arg Gly Ala Glu Pro Cys Cys Gly Pro Leu Lys Asn Arg Val  
20 25 30  
Leu Arg Pro Cys Pro Leu Pro Val His Cys Pro Leu Pro Ile Pro Ser  
35 40 45  
Pro Ala Glu Gly Ile Pro Trp Val Ala Tyr Leu Pro Ile Arg Trp Phe  
50 55 60  
Ile Ser Cys Cys Pro Gly His Cys Ile Gln Ile Pro Met Cys Thr Ser  
65 70 75 80

<210> 1638  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 1638  
 Met Ala Leu Gly Ser Met Tyr Leu Val Leu Thr Leu Ile Val Ala Lys  
 1 5 10 15  
 Val Leu Arg Gly Ala Glu Pro Cys Cys Gly Pro Leu Lys Asn Arg Val  
 20 25 30  
 Leu Arg Pro Cys Pro Leu Pro Val His Cys Pro Leu Pro Ile Pro Ser  
 35 40 45  
 Pro Ala Glu Gly Ile Pro Trp Val Ala Tyr Leu Pro Ile Arg Trp Phe  
 50 55 60  
 Ile Ser Cys Cys Pro Gly His Cys Ile Gln Ile Pro Met Cys Thr Ser  
 65 70 75 80

<210> 1639  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<400> 1639  
 Met Arg Thr Asn Gln Ser Leu Cys Ser Phe Leu Leu Trp Ser Val Pro  
 1 5 10 15  
 Phe His Gln Ala Ala Cys Pro Gln Ala Lys Asp His Pro Leu Glu Pro  
 20 25 30  
 Ser Met His Pro Glu Gly Thr Gln Leu Gln Ser Cys Ser Thr Met Leu  
 35 40 45  
 Gly Pro Arg Gln Leu Ser Ser Glu Lys Gln Pro Leu Leu Pro Pro Arg  
 50 55 60  
 Ser His Leu Lys Ser Ser Pro Met Leu Arg Ala Cys Lys Gly Leu Thr  
 65 70 75 80  
 Ser

<210> 1640  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1640

Met Arg Thr Asn Gln Ser Leu Cys Ser Phe Leu Leu Trp Ser Val Pro  
 1 5 10 15

Phe His Gln Ala Ala Cys Pro Gln Ala Lys Asp His Pro Leu Glu Pro  
 20 25 30

Ser Met His Pro Glu Gly Thr Gln Leu Gln Ser Cys Ser Thr Met Leu  
 35 40 45

Gly Pro Arg Gln Leu Ser Ser Glu Lys Gln Pro Leu Leu Pro Pro Arg  
 50 55 60

Ser His Leu Lys Ser Ser Pro Met Leu Arg Ala Cys Lys Gly Leu Thr  
 65 70 75 80

Ser

&lt;210&gt; 1641

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (52)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1641

Met Val Phe Leu Ser His Leu Phe Gly Thr Lys Arg Leu Phe Leu Leu  
 1 5 10 15

Leu Ala Leu Ile Trp Ala Ser Trp His Phe Ser Tyr Met Pro Ala Asp  
 20 25 30

Ala Trp Val Asp Pro Gly Ile Pro Asp Arg Tyr Leu Gln Ala Tyr Leu  
 35 40 45

Ser Ile Val Xaa Pro  
 50

&lt;210&gt; 1642

&lt;211&gt; 61

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1642

Met His Val Val His Trp Ser Arg Leu Phe Leu Leu Lys Pro Pro Tyr  
 1 5 10 15

Ser Val His Ala Thr Phe Ile Pro Thr Gly Phe Leu Ala Arg Phe Arg  
 20 25 30

Thr Pro Gly Ile Leu Asp Ser Cys Phe Phe His Ser Trp Pro Leu Leu

35

40

45

Leu Ser Tyr Phe Leu Ser Pro Gln Ser Pro Leu Leu Lys  
 50 55 60

&lt;210&gt; 1643

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1643

Met Leu Thr Ala Val Lys Met Phe Arg Leu Ser Ala Val Thr Leu Cys  
 1 5 10 15

Ala Phe Ser Leu Thr Leu His Ser Gly Val Gln Leu Cys Glu Gln Leu  
 20 25 30

Val Leu Arg Ile Ala Leu Phe Gln Asn Cys Arg Ala Glu Asp Gly Phe  
 35 40 45

Gly Leu Arg Val Cys Trp Arg Arg Leu Met Arg Ser Phe Cys Arg Ser  
 50 55 60

Ala Lys Phe Trp Gly Ser Asn Asp Leu Arg Thr Trp Gly Ser Arg Phe  
 65 70 75 80

Leu Trp Lys Asp Cys Thr  
 85

&lt;210&gt; 1644

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1644

Met Leu Thr Ala Val Lys Met Phe Arg Leu Ser Ala Val Thr Leu Cys  
 1 5 10 15

Ala Phe Ser Leu Thr Leu His Ser Gly Val Gln Leu Cys Glu Gln Leu  
 20 25 30

Val Leu Arg Ile Ala Leu Phe Gln Asn Cys Arg Ala Glu Asp Gly Phe  
 35 40 45

Gly Leu Arg Val Cys Trp Arg Arg Leu Met Arg Ser Phe Cys Arg Ser  
 50 55 60

Ala Lys Phe Trp Gly Ser Asn Asp Leu Arg Thr Trp Gly Ser Arg Phe  
 65 70 75 80

Leu Trp Lys Asp Cys Thr  
 85

&lt;210&gt; 1645

<211> 122  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (116)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1645  
 Met Gly Leu Leu Ala Phe Leu Lys Thr Gln Phe Val Leu His Leu Leu  
 1 5 10 15  
 Val Gly Phe Val Phe Val Val Ser Gly Leu Val Ile Asn Phe Val Gln  
 20 25 30  
 Leu Cys Thr Leu Ala Leu Trp Pro Val Ser Lys Gln Leu Tyr Arg Arg  
 35 40 45  
 Leu Asn Cys Arg Leu Ala Tyr Ser Leu Trp Ser Gln Leu Val Met Leu  
 50 55 60  
 Leu Glu Trp Trp Ser Cys Thr Glu Cys Thr Leu Phe Thr Asp Gln Ala  
 65 70 75 80  
 Thr Val Glu Arg Phe Gly Lys Glu His Ala Ile Ile Ile Leu Asn His  
 85 90 95  
 Asn Phe Glu Ile Asp Phe Leu Cys Gly Trp Thr Met Cys Glu Arg Phe  
 100 105 110  
 Gly Met Leu Xaa Ser Ser Lys Gly Pro Arg  
 115 120

<210> 1646  
 <211> 121  
 <212> PRT  
 <213> Homo sapiens

<400> 1646  
 Gly Asp Phe Leu Trp Lys Thr Ser Arg Val Asp Glu Lys Glu Ala Ala  
 1 5 10 15  
 Gln Trp Leu His Lys Leu Tyr Gln Glu Lys Asp Ala Leu Gln Glu Ile  
 20 25 30  
 Tyr Asn Gln Lys Gly Met Phe Pro Gly Glu Gln Phe Lys Pro Ala Arg  
 35 40 45  
 Arg Pro Trp Thr Leu Leu Asn Phe Leu Ser Trp Ala Thr Ile Leu Leu  
 50 55 60  
 Ser Pro Leu Phe Ser Phe Val Leu Gly Val Phe Ala Ser Gly Ser Pro  
 65 70 75 80  
 Leu Leu Ile Leu Thr Phe Leu Gly Phe Val Gly Ala Ala Ser Phe Gly  
 85 90 95

Val Arg Arg Leu Ile Gly Val Thr Glu Ile Glu Lys Gly Ser Ser Tyr  
 100 105 110

Gly Asn Gln Glu Phe Lys Lys Lys Glu  
 115 120

<210> 1647

<211> 376

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (30)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1647

Met Gly Leu Leu Ala Phe Leu Lys Thr Gln Phe Val Leu His Leu Leu  
 1 5 10 15

Val Gly Phe Val Phe Val Val Ser Gly Leu Val Ile Asn Xaa Val Gln  
 20 25 30

Leu Cys Thr Leu Ala Leu Trp Pro Val Ser Lys Gln Leu Tyr Arg Arg  
 35 40 45

Leu Asn Cys Arg Leu Ala Tyr Ser Leu Trp Ser Gln Leu Val Met Leu  
 50 55 60

Leu Glu Trp Trp Ser Cys Thr Glu Cys Thr Leu Phe Thr Asp Gln Ala  
 65 70 75 80

Thr Val Glu Arg Phe Gly Lys Glu His Ala Val Ile Ile Leu Asn His  
 85 90 95

Asn Phe Glu Ile Asp Phe Leu Cys Gly Trp Thr Met Cys Glu Arg Phe  
 100 105 110

Gly Val Leu Gly Ser Ser Lys Val Leu Ala Lys Lys Glu Leu Leu Tyr  
 115 120 125

Val Pro Leu Ile Gly Trp Thr Trp Tyr Phe Leu Glu Ile Val Phe Cys  
 130 135 140

Lys Arg Lys Trp Glu Glu Asp Arg Asp Thr Val Val Glu Gly Leu Arg  
 145 150 155 160

Arg Leu Ser Asp Tyr Pro Glu Tyr Met Trp Phe Leu Leu Tyr Cys Glu  
 165 170 175

Gly Thr Arg Phe Thr Glu Thr Lys His Arg Val Ser Met Glu Val Ala  
 180 185 190

Ala Ala Lys Gly Leu Pro Val Leu Lys Tyr His Leu Leu Pro Arg Thr  
 195 200 205

Lys Gly Phe Thr Thr Ala Val Lys Cys Leu Arg Gly Thr Val Ala Ala  
 210 215 220



Val Tyr Asp Val Thr Leu Asn Phe Arg Gly Asn Lys Asn Pro Ser Leu  
 225 230 235 240  
 Leu Gly Ile Leu Tyr Gly Lys Lys Tyr Glu Ala Asp Met Cys Val Arg  
 245 250 255  
 Arg Phe Pro Leu Glu Asp Ile Pro Leu Asp Glu Lys Glu Ala Ala Gln  
 260 265 270  
 Trp Leu His Lys Leu Tyr Gln Glu Lys Asp Ala Leu Gln Glu Ile Tyr  
 275 280 285  
 Asn Gln Lys Gly Met Phe Pro Gly Glu Gln Phe Lys Pro Ala Arg Arg  
 290 295 300  
 Pro Trp Thr Leu Leu Asn Phe Leu Ser Trp Ala Thr Ile Leu Leu Ser  
 305 310 315 320  
 Pro Leu Phe Ser Phe Val Leu Gly Val Phe Ala Ser Gly Ser Pro Leu  
 325 330 335  
 Leu Ile Leu Thr Phe Leu Gly Phe Val Gly Ala Ala Ser Phe Gly Val  
 340 345 350  
 Arg Arg Leu Ile Gly Val Thr Glu Ile Glu Lys Gly Ser Ser Tyr Gly  
 355 360 365  
 Asn Gln Glu Phe Lys Lys Lys Glu  
 370 375

&lt;210&gt; 1648

&lt;211&gt; 164

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (76)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (112)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (146)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1648

Met Arg Thr Leu Val Glu Leu Gly Pro Trp Ala Gly Asp Phe Gly Pro  
 1 5 10 15

Asp Leu Leu Leu Thr Leu Leu Phe Leu Leu Phe Leu Ala His Gly Val  
 20 25 30

[illegible]

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<210> 1649
<211> 186
<212> PRT
<213> Homo sapiens
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<400> 1649
Met Arg Thr Leu Val Glu Leu Gly Pro Trp Ala Gly Asp Phe Gly Pro
  1          5          10          15
Asp Leu Leu Leu Thr Leu Leu Phe Leu Leu Phe Leu Ala His Gly Val
          20          25          30
Thr Leu Asp Gly Ala Ser Ala Asn Pro Thr Val Ser Leu Gln Glu Phe
          35          40          45
Leu Met Ala Glu Gln Ser Leu Pro Gly Thr Leu Leu Lys Leu Ala Ala
          50          55          60
Gln Gly Leu Gly Met Gln Ala Ala Cys Thr Leu Met Arg Leu Cys Trp
  65          70          75          80
Ala Trp Glu Leu Ser Asp Leu His Leu Leu Gln Ser Leu Met Ala Gln
          85          90          95
Ser Cys Ser Ser Ala Leu Arg Thr Ser Val Pro His Gly Ala Leu Leu
          100          105          110
Glu Ala Ala Cys Thr Phe Cys Phe His Leu Thr Leu Leu His Leu Arg
          115          120          125
His Ser Pro Pro Ala Tyr Ser Gly Pro Ala Val Ala Leu Leu Val Thr

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130                                      135                                      140  
 Val Thr Ala Tyr Thr Ala Gly Pro Phe Thr Ser Ala Phe Phe Asn Pro  
 145                                      150                                      155                                      160  
 Ala Leu Ala Ala Ser Val Thr Phe Ala Cys Ser Asp Thr Pro Tyr Trp  
                                     165                                      170                                      175  
 Ser Thr Cys Arg Cys Thr Gly Trp Ala Leu  
                                     180                                      185  
  
 <210> 1650  
 <211> 206  
 <212> PRT  
 <213> Homo sapiens  
  
 <220>  
 <221> SITE  
 <222> (200)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1650  
 Met Val Arg Leu Ala Ala Glu Leu Leu Leu Leu Gly Leu Leu Leu  
   1                                      5                                      10                                      15  
 Leu Thr Leu His Ile Thr Val Leu Arg Gly Ser Gly Ala Ala Asp Gly  
                                     20                                      25                                      30  
 Pro Asp Ala Ala Ala Gly Asn Ala Ser Gln Ala Gln Leu Gln Asn Asn  
                                     35                                      40                                      45  
 Leu Asn Val Gly Ser Asp Thr Thr Ser Glu Thr Ser Phe Ser Leu Ser  
   50                                      55                                      60  
 Lys Glu Ala Pro Arg Glu His Leu Asp His Gln Ala Ala His Gln Pro  
   65                                      70                                      75                                      80  
 Phe Pro Arg Pro Arg Phe Arg Gln Glu Thr Gly His Pro Ser Leu Gln  
                                     85                                      90                                      95  
 Arg Asp Phe Pro Arg Ser Phe Leu Leu Asp Leu Pro Asn Phe Pro Asp  
                                     100                                      105                                      110  
 Leu Ser Lys Ala Asp Ile Asn Gly Gln Asn Pro Asn Ile Gln Val Thr  
   115                                      120                                      125  
 Ile Glu Val Val Asp Gly Pro Asp Ser Glu Ala Asp Lys Asp Gln His  
   130                                      135                                      140  
 Pro Glu Asn Lys Pro Ser Trp Ser Val Pro Ser Pro Asp Trp Arg Ala  
 145                                      150                                      155                                      160  
 Trp Trp Gln Arg Ser Leu Ser Leu Ala Arg Ala Asn Ser Gly Asp Gln  
                                     165                                      170                                      175  
 Asp Tyr Gln Tyr Asp Ser Thr Ser Asp Asp Ser Asn Phe Leu Asn Pro  
   180                                      185                                      190

Pro Arg Gly Trp Asp His Thr Xaa Pro Gly His Arg Asp Phe  
 195 200 205

<210> 1651

<211> 107

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (52)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1651

His Phe Ser Lys Gly Lys Gln Gln Asn Lys Trp Glu Lys Asp Asn Gly  
 1 5 10 15

Pro His Phe Thr Tyr Phe Asn Thr Ile Leu Thr Ile Phe Ser Ser Thr  
 20 25 30

Asn Ile Ser Pro Ile Asn Lys Tyr Lys Arg Gly Gly Gly Ser Ile Trp  
 35 40 45

Gly Ile Leu Xaa Phe Tyr Val Leu Arg Lys Gln Lys Lys Leu His Tyr  
 50 55 60

Phe Cys Lys Val Phe Ile Glu Ser Arg Ile Ile Val His Gln Ala Ile  
 65 70 75 80

Val Asn Met Thr Trp Ser Tyr Gly Val Glu Leu Arg Lys Asn Lys Val  
 85 90 95

Gly Ser Tyr Ser Ile Phe Tyr Phe Ala Lys Phe  
 100 105

<210> 1652

<211> 464

<212> PRT

<213> Homo sapiens

<400> 1652

Met Val Arg Leu Ala Ala Glu Leu Leu Leu Leu Leu Gly Leu Leu Leu  
 1 5 10 15

Leu Thr Leu His Ile Thr Val Leu Arg Gly Ser Gly Ala Ala Asp Gly  
 20 25 30

Pro Asp Ala Ala Ala Gly Asn Ala Ser Gln Ala Gln Leu Gln Asn Asn  
 35 40 45

Leu Asn Val Gly Ser Asp Thr Thr Ser Glu Thr Ser Phe Ser Leu Ser  
 50 55 60

Lys Glu Ala Pro Arg Glu His Leu Asp His Gln Ala Ala His Gln Pro  
 65 70 75 80

Phe Pro Arg Pro Arg Phe Arg Gln Glu Thr Gly His Pro Ser Leu Gln  
 85 90 95  
 Arg Asp Phe Pro Arg Ser Phe Leu Leu Asp Leu Pro Asn Phe Pro Asp  
 100 105 110  
 Leu Ser Lys Ala Asp Ile Asn Gly Gln Asn Pro Asn Ile Gln Val Thr  
 115 120 125  
 Ile Glu Val Val Asp Gly Pro Asp Ser Glu Ala Asp Lys Asp Gln His  
 130 135 140  
 Pro Glu Asn Lys Pro Ser Trp Ser Val Pro Ser Pro Asp Trp Arg Ala  
 145 150 155 160  
 Trp Trp Gln Arg Ser Leu Ser Leu Ala Arg Ala Asn Ser Gly Asp Gln  
 165 170 175  
 Asp Tyr Lys Tyr Asp Ser Thr Ser Asp Asp Ser Asn Phe Leu Asn Pro  
 180 185 190  
 Pro Arg Gly Trp Asp His Thr Ala Pro Gly His Arg Thr Phe Glu Thr  
 195 200 205  
 Lys Asp Gln Pro Glu Tyr Asp Ser Thr Asp Gly Glu Gly Asp Trp Ser  
 210 215 220  
 Leu Trp Ser Val Cys Ser Val Thr Cys Gly Asn Gly Asn Gln Lys Arg  
 225 230 235 240  
 Thr Arg Ser Cys Gly Tyr Ala Cys Thr Ala Thr Glu Ser Arg Thr Cys  
 245 250 255  
 Asp Arg Pro Asn Cys Pro Gly Ile Glu Asp Thr Phe Arg Thr Ala Ala  
 260 265 270  
 Thr Glu Val Ser Leu Leu Ala Gly Ser Glu Glu Phe Asn Ala Thr Lys  
 275 280 285  
 Leu Phe Glu Val Asp Thr Asp Ser Cys Glu Arg Trp Met Ser Cys Lys  
 290 295 300  
 Ser Glu Phe Leu Lys Lys Tyr Met His Lys Val Met Asn Asp Leu Pro  
 305 310 315 320  
 Ser Cys Pro Cys Ser Tyr Pro Thr Glu Val Ala Tyr Ser Thr Ala Asp  
 325 330 335  
 Ile Phe Asp Arg Ile Lys Arg Lys Asp Phe Arg Trp Lys Asp Ala Ser  
 340 345 350  
 Gly Pro Lys Glu Lys Leu Glu Ile Tyr Lys Pro Thr Ala Arg Tyr Cys  
 355 360 365  
 Ile Arg Ser Met Leu Ser Leu Glu Ser Thr Thr Leu Ala Ala Gln His  
 370 375 380  
 Cys Cys Tyr Gly Asp Asn Met Gln Leu Ile Thr Arg Gly Lys Gly Ala  
 385 390 395 400

Gly Thr Pro Asn Leu Ile Ser Thr Glu Phe Ser Ala Glu Leu His Tyr  
                             405                            410                            415

Lys Val Asp Val Leu Pro Trp Ile Ile Cys Lys Gly Asp Trp Ser Arg  
                             420                            425                            430

Tyr Asn Glu Ala Arg Pro Pro Asn Asn Gly Gln Lys Cys Thr Glu Ser  
                             435                            440                            445

Pro Ser Asp Glu Asp Tyr Ile Lys Gln Phe Gln Glu Ala Arg Glu Tyr  
                             450                            455                            460

&lt;210&gt; 1653

&lt;211&gt; 158

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1653

Met Thr Thr Met Ala Pro Val Gly Leu Gln Thr Arg Ile Pro Trp Leu  
   1                            5                            10                            15

Leu Cys Leu Gly Pro Pro Pro Gly Pro Cys Cys Pro Leu Ser Pro Thr  
                             20                            25                            30

Ser Thr Leu Pro His Thr Pro Thr Ala Arg Ser Leu His Pro Thr Met  
                             35                            40                            45

Ser Phe His Leu Thr Pro Met Val Gly Ala Val Pro Ala Ala Ser Ile  
                             50                            55                            60

Val Arg Ala Ala Gly Ala Val Gly Arg His Gly Val Met Gly Gly Gln  
   65                            70                            75                            80

Gly Ala Arg Gly Gly Pro Arg Ser Gly Pro Pro Ser Pro Ser Pro Ala  
                             85                            90                            95

Val Ala Val Ser Leu Ser Pro Pro Ala Glu Gly Ala Ala Phe Gly Gly  
                             100                            105                            110

Val Gly Lys Gln Val Gly Leu Ala Met Gly Ala Leu Leu His Pro Glu  
                             115                            120                            125

Ala Gln Leu Gly Val Pro Leu Ile Ser Glu Pro Thr Gln Gly Ser Ile  
                             130                            135                            140

Pro Met Asp Arg Pro Leu Ala Trp Pro Ser Pro Thr Thr Pro  
   145                            150                            155

&lt;210&gt; 1654

&lt;211&gt; 106

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (26)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1654

Pro Thr Phe Ser Asp Gln Tyr Leu Ala Pro His Pro Tyr Ser Pro Gln  
 1 5 10 15

Pro Pro Pro Tyr His Glu Leu Pro His Xaa His Gly Gln Ser Gln Arg  
 20 25 30

Val Leu Cys Gly Cys Tyr Val Ala His Cys Gly Ala Arg Leu Gly Arg  
 35 40 45

Ala Leu Leu Val Cys Asp Trp Val Ser Trp Pro Ser Cys Ala Cys Ser  
 50 55 60

Tyr Ser Ala Trp Ala Gln Pro Thr Ser Cys Cys His Thr Gly Asp Cys  
 65 70 75 80

Gly His Cys Asp Ser His Gln Gln Cys Leu Val Pro Pro Pro Ser Leu  
 85 90 95

Arg Gly Arg Gln Gly Thr Phe Asp Tyr Phe  
 100 105

&lt;210&gt; 1655

&lt;211&gt; 158

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1655

Met Thr Thr Met Ala Pro Val Gly Leu Gln Thr Arg Ile Pro Trp Leu  
 1 5 10 15

Leu Cys Leu Gly Pro Pro Pro Gly Pro Cys Cys Pro Leu Ser Pro Thr  
 20 25 30

Ser Thr Leu Pro His Thr Pro Thr Ala Arg Ser Leu His Pro Thr Met  
 35 40 45

Ser Phe His Leu Thr Pro Met Val Gly Ala Val Pro Ala Ala Ser Ile  
 50 55 60

Val Arg Ala Ala Gly Ala Val Gly Arg His Gly Val Met Gly Gly Gln  
 65 70 75 80

Gly Ala Arg Gly Gly Pro Arg Ser Gly Pro Pro Ser Pro Ser Pro Ala  
 85 90 95

Val Ala Val Ser Leu Ser Pro Pro Ala Glu Gly Ala Ala Phe Gly Gly  
 100 105 110

Val Gly Lys Gln Val Gly Leu Ala Met Gly Ala Leu Leu His Pro Glu  
 115 120 125

Ala Gln Leu Gly Val Pro Leu Ile Ser Glu Pro Thr Gln Gly Ser Ile

130 135 140

Pro Met Asp Arg Pro Leu Ala Trp Pro Ser Pro Thr Thr Pro  
 145 150 155

<210> 1656  
 <211> 66  
 <212> PRT  
 <213> Homo sapiens

<400> 1656  
 Met His Arg Pro Glu Ala Met Leu Leu Leu Leu Thr Leu Ala Leu Leu  
 1 5 10 15  
 Gly Gly Pro Thr Trp Ala Gly Lys Met Tyr Gly Pro Gly Gly Gly Lys  
 20 25 30  
 Tyr Phe Ser Thr Thr Glu Asp Tyr Asp His Glu Ile Thr Gly Leu Arg  
 35 40 45  
 Val Ser Val Gly Leu Leu Leu Val Lys Arg Phe Leu Glu Gly Val Ile  
 50 55 60  
 Tyr Glu  
 65

<210> 1657  
 <211> 178  
 <212> PRT  
 <213> Homo sapiens

<400> 1657  
 Met His Arg Pro Glu Ala Met Leu Leu Leu Leu Thr Leu Ala Leu Leu  
 1 5 10 15  
 Gly Gly Pro Thr Trp Ala Gly Lys Met Tyr Gly Pro Gly Gly Gly Lys  
 20 25 30  
 Tyr Phe Ser Thr Thr Glu Asp Tyr Asp His Glu Ile Thr Gly Leu Arg  
 35 40 45  
 Val Ser Val Gly Leu Leu Leu Val Lys Ser Val Gln Val Lys Leu Gly  
 50 55 60  
 Asp Ser Trp Asp Val Lys Leu Gly Ala Leu Gly Gly Asn Thr Gln Glu  
 65 70 75 80  
 Val Thr Leu Gln Pro Gly Glu Tyr Ile Thr Lys Val Phe Val Ala Phe  
 85 90 95  
 Gln Ala Phe Leu Arg Gly Met Val Met Tyr Thr Ser Lys Asp Arg Tyr  
 100 105 110  
 Phe Tyr Phe Gly Lys Leu Asp Gly Gln Ile Ser Ser Ala Tyr Pro Ser  
 115 120 125



Gln Glu Gly Gln Val Leu Val Gly Ile Tyr Gly Gln Tyr Gln Leu Leu  
 130 135 140

Gly Ile Lys Ser Ile Gly Phe Glu Trp Asn Tyr Pro Leu Glu Glu Pro  
 145 150 155 160

Thr Thr Glu Pro Pro Val Asn Leu Thr Tyr Ser Ala Asn Ser Pro Val  
 165 170 175

Gly Arg

<210> 1658

<211> 112

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (12)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (52)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (64)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (67)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (68)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1658

Met Thr Phe Cys Leu Phe Val Leu Phe Cys Leu Xaa Trp Ser Leu Ala  
 1 5 10 15

Leu Leu Pro Arg Val Glu Cys Ser Gly Ala Ile Ser Ala His Cys Asn  
 20 25 30

Leu His Leu Pro Gly Ser Gly Gly Phe Ser Cys Leu Ser Leu Leu Ser  
 35 40 45

Ser Trp Asp Xaa Arg His Ala Pro Pro Cys Pro Asp Asn Phe Cys Xaa  
 50 55 60

Phe Ser Xaa Xaa Gly Val Ser Leu Cys Trp Gln Ala Gly Leu Glu His  
 65 70 75 80

Leu Thr Arg Gly Pro Pro Ala Ser Ala Ser Gln Ser Thr Gly Ile Thr  
                             85                            90                            95  
 Gly Val Ser His Pro Ala Trp Pro Arg Met Thr Phe Lys Arg Ser Asn  
                             100                            105                            110

<210> 1659  
 <211> 122  
 <212> PRT  
 <213> Homo sapiens

<400> 1659  
 Met Thr Thr Ala Ser Ser Leu Ile Ser Pro Phe Phe Pro Leu Pro Pro  
   1                            5                            10                            15  
 Pro Ala His Phe Ser Gln Cys Arg Met Thr Phe Cys Leu Phe Val Leu  
                             20                            25                            30  
 Phe Cys Leu Arg Trp Ser Leu Ala Leu Leu Pro Arg Val Glu Cys Ser  
                             35                            40                            45  
 Gly Ala Ile Ser Ala His Cys Asn Leu His Leu Pro Gly Ser Ser Gly  
                             50                            55                            60  
 Phe Ser Cys Leu Ser Leu Leu Ser Ser Trp Asp Tyr Arg His Ala Pro  
                             65                            70                            75                            80  
 Pro Cys Pro Asp Asn Phe Cys Ile Phe Ser Arg Asp Gly Val Ser Leu  
                             85                            90                            95  
 Cys Trp Pro Gly Trp Ser Arg Thr Pro Asp Leu Val Val His Pro Pro  
                             100                            105                            110  
 Arg Pro Pro Lys Ala Leu Gly Leu Gln Ala  
                             115                            120

<210> 1660  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (24)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1660  
 Met Cys Lys Gly Leu Lys Asn Pro Glu Gly Leu Leu Leu Leu Leu  
   1                            5                            10                            15  
 Leu Leu Leu Phe Thr Asp Thr Xaa Asn Ser His Cys Leu Pro Pro Tyr  
                             20                            25                            30

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Leu Ser Cys Phe Leu His Glu Arg Gln Pro Glu Leu Gln Ser Val Cys
      35                      40                      45

Ile Ser Ala Ala Tyr Val Leu Ala Pro Leu Gln Asn Pro Val Ser Ser
      50                      55                      60

Leu
  65

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<210> 1661
<211> 299
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (172)
<223> Xaa equals any of the naturally occurring L-amino acids

<220>
<221> SITE
<222> (174)
<223> Xaa equals any of the naturally occurring L-amino acids

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<400> 1661																
Gly	Gly	Glu	Glu	Glu	Gly	Glu	Glu	Gly	Ala	Glu	Ile	Ser	Gly	Leu	Gly	
1				5					10					15		
Ala	Gly	Arg	Arg	Ser	Ala	Pro	Ile	Ala	Val	Gly	Leu	Gly	Phe	Leu	Gly	
			20					25					30			
Val	Gly	Gly	Arg	Gly	Gly	Ser	Asp	Met	Glu	Ala	Asn	Gly	Ser	Gln	Gly	
		35					40					45				
Thr	Ser	Gly	Ser	Ala	Asn	Asp	Ser	Gln	His	Asp	Pro	Gly	Lys	Met	Phe	
	50					55					60					
Ile	Gly	Gly	Leu	Ser	Trp	Gln	Thr	Ser	Pro	Asp	Ser	Leu	Arg	Asp	Tyr	
65					70					75					80	
Phe	Ser	Lys	Phe	Gly	Glu	Ile	Arg	Glu	Cys	Met	Val	Met	Arg	Asp	Pro	
				85					90					95		
Thr	Thr	Lys	Arg	Ser	Arg	Gly	Phe	Gly	Phe	Val	Thr	Phe	Ala	Asp	Pro	
			100					105					110			
Ala	Ser	Val	Asp	Lys	Val	Leu	Gly	Gln	Pro	His	His	Glu	Leu	Asp	Ser	
		115					120					125				
Lys	Thr	Ile	Asp	Pro	Lys	Val	Ala	Phe	Pro	Arg	Arg	Ala	Gln	Pro	Lys	
	130					135					140					
Met	Val	Thr	Arg	Thr	Lys	Lys	Ile	Phe	Val	Gly	Gly	Leu	Ser	Ala	Asn	
145					150					155					160	
Thr	Val	Val	Glu	Asp	Val	Lys	Gln	Tyr	Phe	Glu	Xaa	Phe	Xaa	Lys	Val	
				165					170					175		

Glu Asp Ala Met Leu Met Phe Asp Lys Thr Thr Asn Arg His Arg Gly  
 180 185 190  
 Phe Gly Phe Val Thr Phe Glu Asn Glu Asp Val Val Glu Lys Val Cys  
 195 200 205  
 Glu Ile His Phe His Glu Ile Asn Asn Lys Met Val Glu Cys Lys Lys  
 210 215 220  
 Ala Gln Pro Lys Glu Val Met Phe Pro Pro Gly Thr Arg Gly Arg Ala  
 225 230 235 240  
 Arg Gly Leu Pro Tyr Thr Met Asp Ala Phe Met Leu Gly Met Gly Met  
 245 250 255  
 Leu Gly Glu Ser Gly Gln Asp Arg Arg Ser Pro Trp Thr Gly Arg Ala  
 260 265 270  
 Met Glu Ala Ser Thr Pro Asn Trp Val Thr Tyr Gln Trp Gly Lys Leu  
 275 280 285  
 Leu His Leu Ser Lys Pro Gln Phe Pro Cys Leu  
 290 295

&lt;210&gt; 1662

&lt;211&gt; 97

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1662

Met Cys Lys Gly Leu Lys Asn Pro Glu Gly Leu Leu Leu Leu Leu Leu  
 1 5 10 15  
 Leu Leu Leu Phe Thr Asp Thr Ser Asn Ser His Cys Leu Pro Pro Tyr  
 20 25 30  
 Leu Ser Cys Phe Leu His Glu Arg Gln Pro Glu Leu Gln Ser Val Cys  
 35 40 45  
 Ile Ser Ala Ala Tyr Val Leu Ala Thr Pro Pro Glu Pro Ser Phe Ile  
 50 55 60  
 Leu Val Gly Phe Ser Glu Ala Gly Phe Ala Gln Val Ala Cys Phe Leu  
 65 70 75 80  
 Lys Tyr Leu Phe Cys Arg Pro Phe Thr Arg His Gly Tyr Phe Tyr Ser  
 85 90 95  
 Gly

&lt;210&gt; 1663

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

<220>  
 <221> SITE  
 <222> (71)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1663.  
 Met Leu Ala Ala Ala Pro Leu His Glu Gln Lys Gln Met Ile Gly Thr  
   1                  5                  10                  15  
 Cys Tyr Leu Val Leu Lys Arg Trp Ser Asp Trp Met Val Leu Ser Phe  
                   20                  25                  30  
 Leu Pro Leu Leu Leu Ser Cys Asp Phe Glu Gly Ser Val Ser Thr Pro  
           35                  40                  45  
 Leu Ser Met Met Ser Thr Pro Ser Trp Leu Ala Arg Ser Arg Ala Cys  
   50                  55                  60  
 Cys Trp Arg Leu Thr Thr Xaa Ser Cys Cys Ser Cys Trp Ser Leu Gln  
   65                  70                  75                  80  
 Asn Pro Ser Met Pro Arg  
                   85

<210> 1664  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (71)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1664  
 Met Leu Ala Ala Ala Pro Leu His Glu Gln Lys Gln Met Ile Gly Thr  
   1                  5                  10                  15  
 Cys Tyr Leu Val Leu Lys Arg Trp Ser Asp Trp Met Val Leu Ser Phe  
                   20                  25                  30  
 Leu Pro Leu Leu Leu Ser Cys Asp Phe Glu Gly Ser Val Ser Thr Pro  
           35                  40                  45  
 Leu Ser Met Met Ser Thr Pro Ser Trp Leu Ala Arg Ser Arg Ala Cys  
   50                  55                  60  
 Cys Trp Arg Leu Thr Thr Xaa Ser Cys Cys Ser Cys Trp Ser Leu Gln  
   65                  70                  75                  80  
 Asn Pro Ser Met Pro Arg  
                   85

<210> 1665  
 <211> 49  
 <212> PRT

<213> Homo sapiens

<400> 1665

Met Lys His Ser Phe Leu Ser Ser Asp Leu Ile Trp Cys Val Leu Ser  
1 5 10 15

Leu Leu Cys Leu Gly Val Trp Phe Arg Glu Thr Trp Thr Thr Leu Phe  
20 25 30

Gly Arg Thr Gly Leu Pro Arg Asn Gln Gln Cys Pro Arg Arg Lys Gly  
35 40 45

Leu

<210> 1666

<211> 49

<212> PRT

<213> Homo sapiens

<400> 1666

Met Lys His Ser Phe Leu Ser Ser Asp Leu Ile Trp Cys Val Leu Ser  
1 5 10 15

Leu Leu Cys Leu Gly Val Trp Phe Arg Glu Thr Trp Thr Thr Leu Phe  
20 25 30

Gly Arg Thr Gly Leu Pro Arg Asn Gln Gln Cys Pro Arg Arg Lys Gly  
35 40 45

Leu

<210> 1667

<211> 142

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (69)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (76)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (90)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (108)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1667

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Met Tyr Val Thr Leu Val Phe Arg Val Lys Gly Ser Arg Leu Val Lys
 1           5           10           15

Pro Ser Leu Cys Leu Ala Leu Leu Cys Pro Ala Phe Leu Val Gly Val
           20           25           30

Val Arg Val Ala Glu Tyr Arg Asn His Trp Ser Asp Val Leu Ala Gly
           35           40           45

Phe Leu Thr Gly Ala Ala Ile Ala Thr Phe Leu Val Thr Cys Val Val
 50           55           60

His Asn Phe Gln Xaa Arg Pro Pro Ser Gly Arg Xaa Leu Ser Pro Gln
 65           70           75           80

Ser Ala Tyr Pro Arg Leu Pro Gly Pro Xaa Phe Pro His Leu His Asn
           85           90           95

Gly Gly Asp His Pro Cys Pro Ala Gly Cys Arg Xaa Gly Cys Glu Ser
           100          105          110

Ser Ala Trp Met Gln Pro Gly Gly Ser His Arg Ala Ala Phe Thr Gly
          115          120          125

Leu Ala Leu Pro Trp Ala Gly Gly Arg Pro His Pro Lys Arg
          130          135          140

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<210> 1668

<211> 110

<212> PRT

<213> Homo sapiens

<400> 1668

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Met Tyr Val Thr Leu Val Phe Arg Val Lys Gly Ser Arg Leu Val Lys
 1           5           10           15

Pro Ser Leu Cys Leu Ala Leu Leu Cys Pro Ala Phe Leu Val Gly Val
           20           25           30

Val Arg Val Ala Glu Tyr Arg Asn His Trp Ser Asp Val Leu Ala Gly
           35           40           45

Phe Leu Thr Gly Ala Ala Ile Ala Thr Phe Leu Val Thr Cys Val Val
 50           55           60

His Asn Phe Gln Ser Arg Pro Pro Ser Gly Arg Arg Leu Ser Pro Gln
 65           70           75           80

Ser Ala Tyr Pro Arg Leu Pro Gly Pro Gln Phe Pro His Leu His Asn
           85           90           95

Gly Gly Asp His Pro Cys Pro Ala Gly Cys Gln Glu Arg Leu
          100          105          110

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&lt;210&gt; 1669

&lt;211&gt; 159

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1669

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Met Ala Gly Pro Gly Trp Thr Leu Leu Leu Leu Leu Leu Leu Leu
 1          5          10          15

Leu Leu Gly Ser Met Ala Gly Tyr Gly Pro Gln Lys Lys Leu Asn Leu
          20          25          30

Ser His Lys Gly Ile Gly Glu Pro Cys Gly Arg His Glu Glu Cys Gln
          35          40          45

Ser Asn Cys Cys Thr Ile Asn Ser Leu Ala Pro His Thr Leu Cys Thr
          50          55          60

Pro Lys Thr Ile Phe Leu Gln Cys Leu Pro Trp Arg Lys Pro Asn Gly
 65          70          75          80

Tyr Arg Cys Ser His Asp Ser Glu Cys Gln Ser Ser Cys Cys Val Arg
          85          90          95

Asn Asn Ser Pro Gln Glu Leu Cys Thr Pro Gln Ser Val Phe Leu Gln
          100          105          110

Cys Val Pro Trp Arg Lys Pro Asn Gly Asp Phe Cys Ser Ser His Gln
          115          120          125

Glu Cys His Ser Gln Cys Cys Ile Gln Leu Arg Glu Tyr Ser Pro Phe
          130          135          140

Arg Cys Ile Pro Arg Thr Gly Ile Leu Ala Gln Cys Leu Pro Leu
          145          150          155

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&lt;210&gt; 1670

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1670

```

Met Arg Trp Pro Cys Pro Thr Ser Lys Pro Ala Pro Pro Pro Val Leu
 1          5          10          15

Trp Ser His Leu Cys Gln His Arg Trp Gly Leu Thr Pro Ala Ser Thr
          20          25          30

Leu Leu Cys Trp Leu Leu Leu Phe Asn Leu Gly Thr Cys Leu Ser Phe
          35          40          45

Ser His Leu Lys Gln Asn Asn Asn Asn Ser Asn Thr Ser Lys Ile Ser
          50          55          60

Phe Asp Pro Ala Ser Leu Cys Trp Val Ile Ile Ser Leu Ser Phe Pro
          65          70          75          80

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Pro Phe Pro Ser Lys His Leu Lys Arg Val Val Tyr Thr Gln His Ser  
85 90 95

Pro Phe Pro His Tyr Pro Leu Thr Pro Gln Pro Ala Ala Ile  
100 105 110

<210> 1671

<211> 382

<212> PRT

<213> Homo sapiens

<400> 1671

Gly Pro Glu Arg Gly Arg Tyr Tyr Pro Lys Ser His Lys Asn Val Asp  
1 5 10 15

Leu Asn Asp Val Leu Val Pro Lys Pro Phe Ser Gln Phe Trp Gln Pro  
20 25 30

Leu Leu Arg Gly Leu His Ser Gln Asn Phe Thr Gln Ala Leu Leu Glu  
35 40 45

Arg Met Leu Ser Glu Leu Pro Ala Leu Gly Ile Ser Gly Ile Arg Pro  
50 55 60

Thr Tyr Ile Leu Arg Trp Thr Val Glu Leu Ile Val Ala Asn Thr Lys  
65 70 75 80

Thr Gly Arg Asn Ala Arg Arg Phe Ser Ala Gly Gln Trp Glu Ala Arg  
85 90 95

Arg Gly Trp Arg Leu Phe Asn Cys Ser Ala Ser Leu Asp Trp Pro Arg  
100 105 110

Met Val Glu Ser Cys Leu Gly Ser Pro Cys Trp Ala Ser Pro Gln Leu  
115 120 125

Leu Arg Ile Ile Phe Lys Ala Met Gly Gln Gly Leu Pro Asp Glu Glu  
130 135 140

Gln Glu Lys Leu Leu Arg Ile Cys Ser Ile Tyr Thr Gln Ser Gly Glu  
145 150 155 160

Asn Ser Leu Val Gln Glu Gly Ser Glu Ala Ser Pro Ile Gly Lys Ser  
165 170 175

Pro Tyr Thr Leu Asp Ser Leu Tyr Trp Ser Val Lys Pro Ala Ser Ser  
180 185 190

Ser Phe Gly Ser Glu Ala Lys Ala Gln Gln Gln Glu Glu Gln Gly Ser  
195 200 205

Val Asn Asp Val Lys Glu Glu Glu Lys Glu Glu Lys Glu Val Leu Pro  
210 215 220

Asp Gln Val Glu Glu Glu Glu Glu Asn Asp Asp Gln Glu Glu Glu Glu  
225 230 235 240

Glu Asp Glu Asp Asp Glu Asp Asp Glu Glu Glu Asp Arg Met Glu Val

				245					250					255		
Gly	Pro	Phe	Ser	Thr	Gly	Gln	Glu	Ser	Pro	Thr	Ala	Glu	Asn	Ala	Arg	
			260					265					270			
Leu	Leu	Ala	Gln	Lys	Arg	Gly	Ala	Leu	Gln	Gly	Ser	Ala	Trp	Gln	Val	
		275					280					285				
Ser	Ser	Glu	Asp	Val	Arg	Trp	Asp	Thr	Phe	Pro	Leu	Gly	Arg	Met	Pro	
	290					295					300					
Gly	Gln	Thr	Glu	Asp	Pro	Ala	Glu	Leu	Met	Leu	Glu	Asn	Tyr	Asp	Thr	
305					310					315					320	
Met	Tyr	Leu	Leu	Asp	Gln	Pro	Val	Leu	Glu	Gln	Arg	Leu	Glu	Pro	Ser	
				325					330					335		
Thr	Cys	Lys	Thr	Asp	Thr	Leu	Gly	Leu	Ser	Cys	Gly	Val	Gly	Ser	Gly	
			340					345					350			
Asn	Cys	Ser	Asn	Ser	Ser	Ser	Ser	Asn	Phe	Glu	Gly	Leu	Leu	Trp	Ser	
		355					360					365				
Gln	Gly	Gln	Leu	His	Gly	Leu	Lys	Thr	Gly	Leu	Gln	Leu	Phe			
	370					375					380					

<210> 1672

 $\langle 211 \rangle$  110

&lt;212&gt; PRT

<213> Homo sapiens

<400> 1672

Met Arg Trp Pro Cys Pro Thr Ser Lys Pro Ala Pro Pro Pro Val Leu  
1 5 10 15

Trp Ser His Leu Cys Gln His Arg Trp Gly Leu Thr Pro Ala Ser Thr  
20 25 30

Leu Leu Cys Trp Leu Leu Leu Phe Asn Leu Gly Thr Cys Leu Ser Phe  
35 40 45

Ser His Leu Lys Gln Asn Asn Asn Asn Ser Asn Thr Ser Lys Ile Ser  
50 55 60

Phe Asp Pro Ala Ser Leu Cys Trp Val Ile Ile Ser Leu Ser Phe Pro  
65 70 75 80

Pro Phe Pro Ser Lys His Leu Lys Arg Val Val Tyr Thr Gln His Ser  
85 90 95

Pro Phe Pro His Tyr Pro Leu Thr Pro Gln Pro Ala Ala Ile  
100 105 110

<210> 1673

<211> 156

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (92)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (114)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (122)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (134)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1673

Met Leu Gln Gly His Ser Ser Val Phe Gln Ala Leu Leu Gly Thr Phe  
1 5 10 15

Phe Thr Trp Gly Met Thr Ala Ala Gly Ala Ala Leu Val Phe Val Phe  
20 25 30

Ser Ser Gly Gln Arg Arg Ile Leu Asp Gly Ser Leu Gly Phe Ala Ala  
35 40 45

Gly Val Met Leu Ala Ala Ser Tyr Trp Ser Leu Leu Ala Pro Ala Val  
50 55 60

Glu Met Ala Thr Ser Ser Gly Gly Phe Gly Ala Phe Ala Phe Phe Pro  
65 70 75 80

Val Ala Val Gly Phe Thr Leu Gly Ala Ala Phe Xaa Tyr Leu Ala Asp  
85 90 95

Leu Leu Met Pro His Leu Gly Ala Ala Glu Asp Pro Gln Thr Ala Leu  
100 105 110

Ala Xaa Asn Phe Gly Ser Thr Leu Met Xaa Lys Lys Ser Asp Pro Glu  
115 120 125

Gly Pro Ala Leu Leu Xaa Pro Glu Ser Glu Leu Phe Ile Arg Ile Gly  
130 135 140

Arg Leu Ala Ser Phe Ser Ser Ser Leu Leu Gln His  
145 150 155

<210> 1674

<211> 167

<212> PRT

<213> Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (140)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1674

Met Leu Gln Gly His Ser Ser Val Phe Gln Ala Leu Leu Gly Thr Phe  
 1 5 10 15

Phe Thr Trp Gly Met Thr Ala Ala Gly Ala Ala Leu Val Phe Val Phe  
 20 25 30

Ser Ser Gly Gln Arg Arg Ile Leu Asp Gly Ser Leu Gly Phe Ala Ala  
 35 40 45

Gly Val Met Leu Ala Ala Ser Tyr Trp Ser Leu Leu Ala Pro Ala Val  
 50 55 60

Glu Met Ala Thr Ser Ser Gly Gly Phe Gly Ala Phe Ala Phe Phe Pro  
 65 70 75 80

Val Ala Val Gly Phe Thr Leu Gly Ala Ala Phe Val Tyr Leu Ala Asp  
 85 90 95

Leu Leu Met Pro His Leu Gly Ala Ala Glu Asp Pro Gln Thr Ala Leu  
 100 105 110

Ala Leu Asn Phe Gly Ser Thr Leu Met Lys Lys Lys Ser Asp Pro Glu  
 115 120 125

Gly His Ala Leu Leu Phe Pro Glu Arg Ile His Xaa Ile Asp Lys Ser  
 130 135 140

Glu Asn Gly Glu Ala Tyr Gln Arg Lys Lys Ala Ala Ala Thr Gly Leu  
 145 150 155 160

Pro Glu Gly Pro Ala Val Pro  
 165

&lt;210&gt; 1675

&lt;211&gt; 204

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1675

Met Phe Gln Phe Leu Ser Gln Gly Phe Tyr Cys Gly Val Gly Leu Phe  
 1 5 10 15

Thr Arg Phe Leu Lys Leu Leu Gly Ala Leu Leu Leu Leu Ala Leu Ala  
 20 25 30

Leu Phe Leu Gly Phe Leu Gln Leu Gly Trp Arg Phe Leu Val Gly Leu  
 35 40 45

Gly Asp Arg Leu Gly Trp Arg Asp Lys Ala Thr Trp Leu Phe Ser Trp  
 50 55 60

Leu Asp Ser Pro Ala Leu Gln Arg Cys Leu Thr Leu Leu Arg Asp Ser

65					70						75				80
Arg	Pro	Trp	Gln	Arg	Leu	Val	Arg	Ile	Val	Gln	Trp	Gly	Trp	Leu	Glu
				85					90					95	
Leu	Pro	Trp	Val	Lys	Gln	Asn	Ile	Asn	Arg	Gln	Gly	Asn	Ala	Pro	Val
			100					105					110		
Ala	Ser	Gly	Arg	Tyr	Cys	Gln	Pro	Glu	Glu	Glu	Val	Ala	Arg	Leu	Leu
		115					120					125			
Thr	Met	Ala	Gly	Val	Pro	Glu	Asp	Glu	Leu	Asn	Pro	Phe	His	Val	Leu
	130					135					140				
Gly	Val	Glu	Ala	Thr	Ala	Ser	Asp	Val	Glu	Leu	Lys	Lys	Ala	Tyr	Arg
145					150					155					160
Gln	Leu	Ala	Val	Met	Val	His	Pro	Asp	Lys	Asn	His	His	Pro	Arg	Ala
				165					170					175	
Glu	Glu	Ala	Phe	Lys	Val	Phe	Ala	Ser	Ser	Leu	Gly	Thr	Leu	Ser	Ala
			180					185					190		
Met	Leu	Lys	Lys	Arg	Lys	Gly	Val	Trp	Arg	Leu	Lys				
		195					200								

&lt;210&gt; 1676

&lt;211&gt; 412

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1676

Met	Gly	Val	Trp	Thr	Gly	Arg	Leu	Gly	Gly	Trp	Ala	Gln	Val	Met	Phe
1				5					10					15	
Gln	Phe	Leu	Ser	Gln	Gly	Phe	Tyr	Cys	Gly	Val	Gly	Leu	Phe	Thr	Arg
			20					25					30		
Phe	Leu	Lys	Leu	Leu	Gly	Ala	Leu	Leu	Leu	Ala	Leu	Ala	Leu	Phe	
		35					40					45			
Leu	Gly	Phe	Leu	Gln	Leu	Gly	Trp	Arg	Phe	Leu	Val	Gly	Leu	Gly	Asp
	50					55					60				
Arg	Leu	Gly	Trp	Arg	Asp	Lys	Ala	Thr	Trp	Leu	Phe	Ser	Trp	Leu	Asp
65					70					75				80	
Ser	Pro	Ala	Leu	Gln	Arg	Cys	Leu	Thr	Leu	Leu	Arg	Asp	Ser	Arg	Pro
				85					90					95	
Trp	Gln	Arg	Leu	Val	Arg	Ile	Val	Gln	Trp	Gly	Trp	Leu	Glu	Leu	Pro
			100					105					110		
Trp	Val	Lys	Gln	Asn	Ile	Asn	Arg	Gln	Gly	Asn	Ala	Pro	Val	Ala	Ser
		115					120					125			
Gly	Arg	Tyr	Cys	Gln	Pro	Glu	Glu	Glu	Val	Ala	Arg	Leu	Leu	Thr	Met
	130						135				140				

Ala Gly Val Pro Glu Asp Glu Leu Asn Pro Phe His Val Leu Gly Val  
 145 150 155 160  
 Glu Ala Thr Ala Ser Asp Val Glu Leu Lys Lys Ala Tyr Arg Gln Leu  
 165 170 175  
 Ala Val Met Val His Pro Asp Lys Asn His His Pro Arg Ala Glu Glu  
 180 185 190  
 Ala Phe Lys Val Leu Arg Ala Ala Trp Asp Ile Val Ser Asn Ala Glu  
 195 200 205  
 Lys Arg Lys Glu Tyr Glu Met Lys Arg Met Ala Glu Asn Glu Leu Ser  
 210 215 220  
 Arg Ser Val Asn Glu Phe Leu Ser Lys Leu Gln Asp Asp Leu Lys Glu  
 225 230 235 240  
 Ala Met Asn Thr Met Met Cys Ser Arg Cys Gln Gly Lys His Arg Arg  
 245 250 255  
 Phe Glu Met Asp Arg Glu Pro Lys Ser Ala Arg Tyr Cys Ala Glu Cys  
 260 265 270  
 Asn Arg Leu His Pro Ala Glu Glu Gly Asp Phe Trp Ala Glu Ser Ser  
 275 280 285  
 Met Leu Gly Leu Lys Ile Thr Tyr Phe Ala Leu Met Asp Gly Lys Val  
 290 295 300  
 Tyr Asp Ile Thr Gln Trp Ala Gly Cys Gln Arg Val Gly Ile Ser Pro  
 305 310 315 320  
 Asp Thr His Arg Val Pro Tyr His Ile Ser Phe Gly Ser Arg Ile Pro  
 325 330 335  
 Gly Thr Arg Gly Arg Gln Arg Ala Thr Pro Asp Ala Pro Pro Ala Asp  
 340 345 350  
 Leu Gln Asp Phe Leu Ser Arg Ile Phe Gln Val Pro Pro Gly Gln Met  
 355 360 365  
 Pro Asn Gly Asn Phe Phe Ala Ala Pro Gln Pro Ala Pro Gly Ala Ala  
 370 375 380  
 Ala Ala Ser Lys Pro Asn Ser Thr Val Pro Lys Gly Glu Ala Lys Pro  
 385 390 395 400  
 Lys Arg Arg Lys Lys Val Arg Arg Pro Phe Gln Arg  
 405 410

&lt;210&gt; 1677

&lt;211&gt; 122

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (119)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1677

```

Met Ala Leu Phe Arg Cys Val Trp Ser Val Leu Ser Ala Leu Gly Lys
  1              5              10              15

Ser Gly Ser Asp Leu Cys Ala Gly Cys Gly Ser Arg Leu Arg Ser Pro
              20              25              30

Phe Ser Phe Ala Tyr Val Pro Arg Cys Phe Ser Ser Thr Ala Asn Ser
              35              40              45

Tyr Pro Lys Lys Pro Leu Thr Ser Tyr Val Arg Phe Ser Lys Glu Gln
  50              55              60

Leu Pro Ile Phe Lys Ala Gln Asn Pro Asp Ala Lys Asn Ser Glu Leu
  65              70              75              80

Ile Arg Lys Ile Ala Gln Leu Trp Arg Glu Leu Pro Asp Ser Glu Lys
              85              90              95

Lys Ile Tyr Glu Asp Ala Tyr Arg Ala Asp Leu Ala Gly His Thr Lys
              100              105              110

Lys Glu Ile Asn Arg Ile Xaa Glu Pro Gly
  115              120

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&lt;210&gt; 1678

&lt;211&gt; 246

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1678

```

Met Ala Leu Phe Arg Cys Val Trp Ser Val Leu Ser Ala Leu Gly Lys
  1              5              10              15

Ser Gly Ser Asp Leu Cys Ala Gly Cys Gly Ser Arg Leu Arg Ser Pro
              20              25              30

Phe Ser Phe Ala Tyr Val Pro Arg Cys Phe Ser Ser Thr Ala Asn Ser
              35              40              45

Tyr Pro Lys Lys Pro Leu Thr Ser Tyr Val Arg Phe Ser Lys Glu Gln
  50              55              60

Leu Pro Ile Phe Lys Ala Gln Asn Pro Asp Ala Lys Asn Ser Glu Leu
  65              70              75              80

Ile Arg Lys Ile Ala Gln Leu Trp Arg Glu Leu Pro Asp Ser Glu Lys
              85              90              95

Lys Ile Tyr Glu Asp Ala Tyr Arg Ala Asp Trp Gln Ala Tyr Lys Glu
              100              105              110

Glu Ile Asn Arg Ile Gln Glu Gln Leu Thr Pro Ser Gln Ile Val Ser
              115              120              125

```

Leu Glu Lys Glu Ile Gln Gln Lys Arg Leu Lys Lys Lys Ala Leu Ile  
 130 135 140  
 Lys Lys Arg Glu Leu Thr Met Leu Gly Lys Pro Lys Arg Pro Arg Ser  
 145 150 155 160  
 Ala Tyr Asn Ile Phe Ile Ala Glu Arg Phe Gln Glu Thr Lys Asp Gly  
 165 170 175  
 Thr Ser Gln Val Lys Leu Lys Thr Ile Asn Glu Asn Trp Lys Asn Leu  
 180 185 190  
 Ser Ser Ser Gln Lys Gln Val Tyr Ile Gln Leu Ala Asn Asp Asp Lys  
 195 200 205  
 Ile Arg Tyr Tyr Asn Glu Met Lys Ser Trp Glu Glu Gln Met Met Glu  
 210 215 220  
 Val Gly Arg Lys Asp Leu Leu Arg Arg Thr Val Lys His Gln Arg Lys  
 225 230 235 240  
 Val Asp Pro Glu Glu Tyr  
 245

&lt;210&gt; 1679

&lt;211&gt; 495

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (330)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (333)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1679

Met Ser Met Leu Val Val Phe Leu Leu Leu Trp Gly Val Thr Trp Gly  
 1 5 10 15  
 Pro Val Thr Glu Ala Ala Ile Phe Tyr Glu Thr Gln Pro Ser Leu Trp  
 20 25 30  
 Ala Glu Ser Glu Ser Leu Leu Lys Pro Leu Ala Asn Val Thr Leu Thr  
 35 40 45  
 Cys Gln Ala Arg Leu Glu Thr Pro Asp Phe Gln Leu Phe Lys Asn Gly  
 50 55 60  
 Val Ala Gln Glu Pro Val His Leu Asp Ser Pro Ala Ile Lys His Gln  
 65 70 75 80  
 Phe Leu Leu Thr Gly Asp Thr Gln Gly Arg Tyr Arg Cys Arg Ser Gly  
 85 90 95



Leu Ser Thr Gly Trp Thr Gln Leu Ser Lys Leu Leu Glu Leu Thr Gly  
 100 105 110  
 Pro Lys Ser Leu Pro Ala Pro Trp Leu Ser Met Ala Pro Val Ser Trp  
 115 120 125  
 Ile Thr Pro Gly Leu Lys Thr Thr Ala Val Cys Arg Gly Val Leu Arg  
 130 135 140  
 Gly Val Thr Phe Leu Leu Arg Arg Glu Gly Asp His Glu Phe Leu Glu  
 145 150 155 160  
 Val Pro Glu Ala Gln Glu Asp Val Glu Ala Thr Phe Pro Val His Gln  
 165 170 175  
 Pro Gly Asn Tyr Ser Cys Ser Tyr Arg Thr Asp Gly Glu Gly Ala Leu  
 180 185 190  
 Ser Glu Pro Ser Ala Thr Val Thr Ile Glu Glu Leu Ala Ala Pro Pro  
 195 200 205  
 Pro Pro Val Leu Met His His Gly Glu Ser Ser Gln Val Leu His Pro  
 210 215 220  
 Gly Asn Lys Val Thr Leu Thr Cys Val Ala Pro Leu Ser Gly Val Asp  
 225 230 235 240  
 Phe Gln Leu Arg Arg Gly Glu Lys Glu Leu Leu Val Pro Arg Ser Ser  
 245 250 255  
 Thr Ser Pro Asp Arg Ile Phe Phe His Leu Asn Ala Val Ala Leu Gly  
 260 265 270  
 Asp Gly Gly His Tyr Thr Cys Arg Tyr Arg Leu His Asp Asn Gln Asn  
 275 280 285  
 Gly Trp Ser Gly Asp Ser Ala Pro Val Glu Leu Ile Leu Ser Asp Glu  
 290 295 300  
 Thr Leu Pro Ala Pro Glu Phe Ser Pro Glu Pro Glu Ser Gly Arg Ala  
 305 310 315 320  
 Leu Arg Leu Arg Cys Leu Ala Pro Leu Xaa Gly Ala Xaa Phe Ala Leu  
 325 330 335  
 Val Arg Glu Asp Arg Gly Gly Arg Arg Val His Arg Phe Gln Ser Pro  
 340 345 350  
 Ala Gly Thr Glu Ala Leu Phe Glu Leu His Asn Ile Ser Val Ala Asp  
 355 360 365  
 Ser Ala Asn Tyr Ser Cys Val Tyr Val Asp Leu Lys Pro Pro Phe Gly  
 370 375 380  
 Gly Ser Ala Pro Ser Glu Arg Leu Glu Leu His Val Asp Gly Pro Pro  
 385 390 395 400  
 Pro Arg Pro Gln Leu Arg Ala Thr Trp Ser Gly Ala Val Leu Ala Gly  
 405 410 415

Arg Asp Ala Val Leu Arg Cys Glu Gly Pro Ile Pro Asp Val Thr Phe  
 420 425 430

Glu Leu Leu Arg Glu Gly Glu Thr Lys Ala Val Lys Thr Val Arg Thr  
 435 440 445

Pro Gly Ala Ala Ala Asn Leu Glu Leu Ile Phe Val Gly Pro Gln His  
 450 455 460

Ala Gly Asn Tyr Arg Cys Arg Tyr Arg Ser Trp Val Pro His Thr Phe  
 465 470 475 480

Glu Ser Glu Leu Ser Asp Pro Val Glu Leu Leu Val Ala Glu Ser  
 485 490 495

&lt;210&gt; 1680

&lt;211&gt; 495

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1680

Met Ser Met Leu Val Val Phe Leu Leu Leu Trp Gly Val Thr Trp Gly  
 1 5 10 15

Pro Val Thr Glu Ala Ala Ile Phe Tyr Glu Thr Gln Pro Ser Leu Trp  
 20 25 30

Ala Glu Ser Glu Ser Leu Leu Lys Pro Leu Ala Asn Val Thr Leu Thr  
 35 40 45

Cys Gln Ala Arg Leu Glu Thr Pro Asp Phe Gln Leu Phe Lys Asn Gly  
 50 55 60

Val Ala Gln Glu Pro Val His Leu Asp Ser Pro Ala Ile Lys His Gln  
 65 70 75 80

Phe Leu Leu Thr Gly Asp Thr Gln Gly Arg Tyr Arg Cys Arg Ser Gly  
 85 90 95

Leu Ser Thr Gly Trp Thr Gln Leu Ser Lys Leu Leu Glu Leu Thr Gly  
 100 105 110

Pro Lys Ser Leu Pro Ala Pro Trp Leu Ser Met Ala Pro Val Ser Trp  
 115 120 125

Ile Thr Pro Gly Leu Lys Thr Thr Ala Val Cys Arg Gly Val Leu Arg  
 130 135 140

Gly Val Thr Phe Leu Leu Arg Arg Glu Gly Asp His Glu Phe Leu Glu  
 145 150 155 160

Val Pro Glu Gly Gln Glu Asp Val Glu Ala Thr Phe Pro Val His Gln  
 165 170 175

Pro Gly Asn Tyr Ser Cys Ser Tyr Arg Thr Asp Gly Glu Gly Ala Leu  
 180 185 190

Ser Glu Pro Ser Ala Thr Val Thr Ile Glu Glu Leu Ala Ala Pro Pro  
 195 200 205  
 Pro Pro Val Leu Met His His Gly Glu Ser Ser Gln Val Leu His Pro  
 210 215 220  
 Gly Asn Lys Val Thr Leu Thr Cys Val Ala Pro Leu Ser Gly Val Asp  
 225 230 235 240  
 Phe Gln Leu Arg Arg Gly Glu Lys Glu Leu Leu Val Pro Arg Ser Ser  
 245 250 255  
 Thr Ser Pro Asp Arg Ile Phe Phe His Leu Asn Ala Val Ala Leu Gly  
 260 265 270  
 Asp Gly Gly His Tyr Thr Cys Arg Tyr Arg Leu His Asp Asn Gln Asn  
 275 280 285  
 Gly Trp Ser Gly Asp Ser Ala Pro Val Glu Leu Ile Leu Ser Asp Glu  
 290 295 300  
 Thr Leu Pro Ala Pro Glu Phe Ser Pro Glu Pro Glu Ser Gly Arg Ala  
 305 310 315 320  
 Leu Arg Leu Arg Cys Leu Ala Pro Leu Glu Gly Ala Arg Phe Ala Leu  
 325 330 335  
 Val Arg Glu Asp Arg Gly Gly Arg Arg Val His Arg Phe Gln Ser Pro  
 340 345 350  
 Ala Gly Thr Glu Ala Leu Phe Glu Leu His Asn Ile Ser Val Ala Asp  
 355 360 365  
 Ser Ala Asn Tyr Ser Cys Val Tyr Val Asp Leu Lys Pro Pro Phe Gly  
 370 375 380  
 Gly Ser Ala Pro Ser Glu Arg Leu Glu Leu His Val Asp Gly Pro Pro  
 385 390 395 400  
 Pro Arg Pro Gln Leu Arg Ala Thr Trp Ser Gly Ala Val Leu Ala Gly  
 405 410 415  
 Arg Asp Ala Val Leu Arg Cys Glu Gly Pro Ile Pro Asp Val Thr Phe  
 420 425 430  
 Glu Leu Leu Arg Glu Gly Glu Thr Lys Ala Val Lys Thr Val Arg Thr  
 435 440 445  
 Pro Gly Ala Ala Ala Asn Leu Glu Leu Ile Phe Val Gly Pro Gln His  
 450 455 460  
 Ala Gly Asn Tyr Arg Cys Arg Tyr Arg Ser Trp Val Pro His Thr Phe  
 465 470 475 480  
 Glu Ser Glu Leu Ser Asp Pro Val Glu Leu Leu Val Ala Glu Ser  
 485 490 495

&lt;210&gt; 1681

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1681

```

Met Leu Lys Asp Phe Ser Asn Leu Leu Leu Val Val Leu Cys Asp Tyr
 1              5              10              15

Val Leu Gly Glu Ala Glu Tyr Leu Leu Leu Arg Glu Pro Gly His Val
              20              25              30

Ala Leu Ser Asn Asp Thr Val Tyr Val Asp Phe Gln Tyr Phe Asp Gly
              35              40              45

Ala Asn Gly Thr Leu Arg Asn Val Ser Val Leu Leu Leu Glu Ala Asn
              50              55              60

Thr Asn Gln Thr Val Thr Thr Lys Tyr Leu Leu Thr Asn Gln Ser Gln
              65              70              75              80

Gly Thr Leu Lys Phe Glu Cys Phe Tyr Phe Lys Glu Ala Gly Asp Tyr
              85              90              95

Trp Phe Thr Met Thr Pro Glu Ala Thr Asp Asn Ser Thr Pro Phe Pro
              100              105              110

Trp Trp Glu Lys Ser Ala Phe Leu Lys Val Glu Trp Pro Val Phe His
              115              120              125

Val Asp Leu Asn Arg Ser Ala Lys Ala Ala Glu Gly Thr Phe Gln Val
              130              135              140

Gly Leu Phe Thr Ser Gln Pro Leu Cys
145              150

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&lt;210&gt; 1682

&lt;211&gt; 78

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1682

```

Ser Ser Pro Thr Ser Pro Lys Asp Asn Tyr Gln Arg Val Ser Ser Leu
 1              5              10              15

Ser Pro Ser Gln Cys Arg Lys Asp Lys Cys Gln Ser Phe Pro Thr His
              20              25              30

Pro Glu Phe Ala Phe Tyr Asp Asn Thr Ser Phe Gly Leu Thr Glu Ala
              35              40              45

Glu Gln Arg Met Leu Asp Leu Pro Gly Tyr Phe Gly Ser Asn Glu Glu
              50              55              60

Asp Glu Thr Thr Ser Thr Leu Ser Val Glu Lys Leu Val Ile
              65              70              75

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&lt;210&gt; 1683

&lt;211&gt; 490

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1683

Met Gly Lys Asn Lys Tyr Cys Phe Asp Phe Gly Ile Ser Ser Arg Ser  
 1 5 10 15

His Phe Ser Ala Lys Glu Glu Cys Met Leu Ile Gln Arg Asn Thr Ala  
 20 25 30

Phe Gln Pro Ser Ser Pro Ser Pro Leu Gln Pro Gln Gly Pro Val Lys  
 35 40 45

Ser Asn Asn Ile Val Thr Val Thr Gly Ile Ser Leu Cys Leu Phe Ile  
 50 55 60

Ile Ile Ala Thr Val Leu Ile Thr Leu Trp Arg Arg Phe Gly Arg Pro  
 65 70 75 80

Ala Lys Cys Ser Thr Pro Ala Arg His Asn Ser Ile His Ser Pro Ser  
 85 90 95

Phe Arg Lys Asn Ser Asp Glu Glu Asn Ile Cys Glu Leu Ser Glu Gln  
 100 105 110

Arg Gly Ser Phe Ser Asp Gly Gly Asp Gly Pro Thr Gly Ser Pro Gly  
 115 120 125

Asp Thr Gly Ile Pro Leu Thr Tyr Arg Arg Ser Gly Pro Val Pro Pro  
 130 135 140

Glu Asp Asp Ala Ser Gly Ser Glu Ser Phe Gln Ser Asn Ala Gln Lys  
 145 150 155 160

Ile Ile Pro Pro Leu Phe Ser Tyr Arg Leu Ala Gln Gln Gln Leu Lys  
 165 170 175

Glu Met Lys Lys Lys Gly Leu Thr Glu Thr Thr Lys Val Tyr His Val  
 180 185 190

Ser Gln Ser Pro Leu Thr Asp Thr Ala Ile Asp Ala Ala Pro Ser Ala  
 195 200 205

Pro Leu Asp Leu Glu Ser Pro Glu Glu Ala Ala Ala Asn Lys Phe Arg  
 210 215 220

Ile Lys Ser Pro Phe Pro Glu Gln Pro Ala Val Ser Ala Gly Glu Arg  
 225 230 235 240

Pro Pro Ser Arg Leu Asp Leu Asn Val Thr Gln Ala Ser Cys Ala Ile  
 245 250 255

Ser Pro Ser Gln Thr Leu Ile Arg Lys Ser Gln Ala Arg His Val Gly  
 260 265 270

Ser Arg Gly Gly Pro Ser Glu Arg Ser His Ala Arg Asn Ala His Phe  
 275 280 285

Arg Arg Thr Ala Ser Phe His Glu Ala Arg Gln Ala Arg Pro Phe Arg  
 290 295 300  
 Glu Arg Ser Met Ser Thr Leu Thr Pro Arg Gln Ala Pro Ala Tyr Ser  
 305 310 315 320  
 Ser Arg Thr Arg Thr Cys Glu Gln Ala Glu Asp Arg Phe Arg Pro Gln  
 325 330 335  
 Ser Arg Gly Ala His Leu Phe Pro Glu Lys Leu Glu His Phe Gln Glu  
 340 345 350  
 Ala Ser Gly Thr Arg Gly Pro Leu Asn Pro Leu Pro Lys Ser Tyr Thr  
 355 360 365  
 Leu Gly Gln Pro Leu Arg Lys Pro Asp Leu Gly Asp His Gln Ala Gly  
 370 375 380  
 Leu Val Ala Gly Ile Glu Arg Thr Glu Pro His Arg Ala Arg Arg Gly  
 385 390 395 400  
 Pro Ser Pro Ser His Lys Ser Val Ser Arg Lys Gln Ser Ser Pro Ile  
 405 410 415  
 Ser Pro Lys Asp Asn Tyr Gln Arg Val Ser Ser Leu Ser Pro Ser Gln  
 420 425 430  
 Cys Arg Lys Asp Lys Cys Gln Ser Phe Pro Thr His Pro Glu Phe Ala  
 435 440 445  
 Phe Tyr Asp Asn Thr Ser Phe Gly Leu Thr Glu Ala Glu Gln Arg Met  
 450 455 460  
 Leu Asp Leu Pro Gly Tyr Phe Gly Ser Asn Glu Glu Asp Glu Thr Thr  
 465 470 475 480  
 Ser Thr Leu Ser Val Glu Lys Leu Val Ile  
 485 490

&lt;210&gt; 1684

&lt;211&gt; 178

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (123)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (175)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1684

Met Ala Met Val Pro Gly Ala Thr Leu Arg Arg Leu Leu Ser Val Val  
 1 5 10 15

Leu Pro Thr Ala Ser Gln Pro Gln Leu Leu Ala Leu Leu Asp Ser Ala  
                   20                                  25                                  30  
 Thr Glu Arg His Val Asp His Ala Ala Glu Ser Asp Gly Gly Ala Glu  
                   35                                  40                                  45  
 Gln Ala Asp Val Gly Arg Arg Arg Lys His Gln Ser Trp Trp Gln Ala  
                   50                                  55                                  60  
 Leu Asp Gly Lys Leu Arg Gly Asp Leu Ile Ser Arg Gly Leu Glu Lys  
                   65                                  70                                  75                                  80  
 Met Leu Trp Ala Arg Lys Arg Lys Gln Ser Ile Leu Lys Lys Thr Cys  
                                   85                                  90                                  95  
 Leu Pro Leu Arg Glu Arg Met Ile Phe Ser Gly Lys Gly Ser Trp Pro  
                                   100                                  105                                  110  
 His Leu Ser Leu Glu Pro Ile Gly Glu Leu Xaa Pro Val Pro Ile Val  
                   115                                  120                                  125  
 Gly Ala Glu Thr Ile Asp Leu Leu Asn Thr Gly Glu Lys Leu Phe Ile  
                   130                                  135                                  140  
 Phe Arg Asn Pro Lys Glu Pro Glu Ile Ser Leu His Val Pro Pro Arg  
                   145                                  150                                  155                                  160  
 Lys Lys Lys Asn Phe Leu Asn Ala Lys Lys Ala Met Arg Ala Xaa Gly  
                                   165                                  170                                  175  
 Met Asp

<210> 1685  
 <211> 200  
 <212> PRT  
 <213> Homo sapiens

<400> 1685  
 Met Ala Met Val Pro Gly Ala Thr Leu Arg Arg Leu Leu Ser Val Val  
   1                                  5                                  10                                  15  
 Leu Pro Thr Ala Ser Gln Pro Gln Leu Leu Ala Leu Leu Asp Ser Ala  
                   20                                  25                                  30  
 Thr Glu Arg His Val Asp His Ala Ala Glu Ser Asp Gly Gly Ala Glu  
                   35                                  40                                  45  
 Gln Ala Asp Val Gly Arg Arg Arg Lys His Gln Ser Trp Trp Gln Ala  
                   50                                  55                                  60  
 Leu Asp Gly Lys Leu Arg Gly Asp Leu Ile Ser Arg Gly Leu Glu Lys  
                   65                                  70                                  75                                  80  
 Met Leu Trp Ala Arg Lys Arg Lys Gln Ser Ile Leu Lys Lys Thr Cys  
                                   85                                  90                                  95  
 Leu Pro Leu Arg Glu Arg Met Ile Phe Ser Gly Lys Gly Ser Trp Pro

			100					105					110			
His	Leu	Ser	Leu	Glu	Pro	Ile	Gly	Glu	Leu	Gly	Pro	Val	Pro	Ile	Val	
		115					120					125				
Gly	Ala	Glu	Thr	Ile	Asp	Leu	Leu	Asn	Thr	Gly	Glu	Lys	Leu	Phe	Ile	
	130					135					140					
Phe	Arg	Asn	Pro	Lys	Glu	Pro	Glu	Ile	Ser	Leu	Thr	Phe	Leu	Gln	Glu	
145					150					155					160	
Lys	Glu	Asp	Leu	Phe	Glu	Cys	Pro	Lys	Gly	His	Glu	Gly	Leu	Gly	His	
				165					170					175		
Gly	Leu	Ala	Gln	Gly	Lys	Asp	Leu	Arg	Glu	His	Met	Lys	Arg	Glu	Gly	
			180					185					190			
Met	Ile	Phe	Ser	Cys	Pro	Pro	Val									
		195					200									

```
<210> 1686
<211> 419
<212> PRT
<213> Homo sapiens
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<400> 1686

Met 1	Ser	Cys	Ala	Gly 5	Arg	Ala	Gly	Pro	Ala 10	Arg	Leu	Ala	Ala	Leu 15	Ala
Leu	Leu	Thr	Cys 20	Ser	Leu	Trp	Pro	Ala 25	Arg	Ala	Asp	Asn	Ala 30	Ser	Gln
Glu	Tyr	Tyr 35	Thr	Ala	Leu	Ile	Asn 40	Val	Thr	Val	Gln	Glu 45	Pro	Gly	Arg
Gly	Ala 50	Pro	Leu	Thr	Phe	Arg 55	Ile	Asp	Arg	Gly	Arg 60	Tyr	Gly	Leu	Asp
Ser 65	Pro	Lys	Ala	Glu	Val 70	Arg	Gly	Gln	Val	Leu 75	Ala	Pro	Leu	Pro	Leu 80
His	Gly	Val	Ala	Asp 85	His	Leu	Gly	Cys	Asp 90	Pro	Gln	Thr	Arg	Phe 95	Phe
Val	Pro	Pro	Asn 100	Ile	Lys	Gln	Trp	Ile 105	Ala	Leu	Leu	Gln	Arg 110	Gly	Asn
Cys	Thr	Phe 115	Lys	Glu	Lys	Ile	Ser 120	Arg	Ala	Ala	Phe	His 125	Asn	Ala	Val
Ala 130	Val	Val	Ile	Tyr	Asn	Asn 135	Lys	Ser	Lys	Glu	Glu 140	Pro	Val	Thr	Met
Thr 145	His	Pro	Gly	Thr	Gly 150	Asp	Ile	Ile	Ala	Val 155	Met	Ile	Thr	Glu	Leu 160
Arg	Gly	Lys	Asp 165	Ile	Leu	Ser	Tyr	Leu 170	Glu	Lys	Asn	Ile	Ser 175	Val	Gln



Met Thr Ile Ala Val Gly Thr Arg Met Pro Pro Lys Asn Phe Ser Arg  
 180 185 190  
 Gly Ser Leu Val Phe Val Ser Ile Ser Phe Ile Val Leu Met Ile Ile  
 195 200 205  
 Ser Ser Ala Trp Leu Ile Phe Tyr Phe Ile Gln Lys Ile Arg Tyr Thr  
 210 215 220  
 Asn Ala Arg Asp Arg Asn Gln Arg Arg Leu Gly Asp Ala Ala Lys Lys  
 225 230 235 240  
 Ala Ile Ser Lys Leu Thr Thr Arg Thr Val Lys Lys Gly Asp Lys Glu  
 245 250 255  
 Thr Asp Pro Asp Phe Asp His Cys Ala Val Cys Ile Glu Ser Tyr Lys  
 260 265 270  
 Gln Asn Asp Val Val Arg Ile Leu Pro Cys Lys His Val Phe His Lys  
 275 280 285  
 Ser Cys Val Asp Pro Trp Leu Ser Glu His Cys Thr Cys Pro Met Cys  
 290 295 300  
 Lys Leu Asn Ile Leu Lys Ala Leu Gly Ile Val Pro Asn Leu Pro Cys  
 305 310 315 320  
 Thr Asp Asn Val Ala Phe Asp Met Glu Arg Leu Thr Arg Thr Gln Ala  
 325 330 335  
 Val Asn Arg Arg Ser Ala Leu Gly Asp Leu Ala Gly Asp Asn Ser Leu  
 340 345 350  
 Gly Leu Glu Pro Leu Arg Thr Ser Gly Ile Ser Pro Leu Pro Gln Asp  
 355 360 365  
 Gly Glu Leu Thr Pro Arg Thr Gly Glu Ile Asn Ile Ala Val Thr Lys  
 370 375 380  
 Glu Trp Phe Ile Ile Ala Ser Phe Gly Leu Leu Ser Ala Leu Thr Leu  
 385 390 395 400  
 Cys Tyr Met Ile Ile Arg Ala Thr Ala Ser Leu Asn Ala Asn Glu Val  
 405 410 415  
 Glu Trp Phe

&lt;210&gt; 1687

&lt;211&gt; 419

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1687

Met Ser Cys Ala Gly Arg Ala Gly Pro Ala Arg Leu Ala Ala Leu Ala  
 1 5 10 15

Leu Leu Thr Cys Ser Leu Trp Pro Ala Arg Ala Asp Asn Ala Ser Gln  
                   20                                  25                                  30  
 Glu Tyr Tyr Thr Ala Leu Ile Asn Val Thr Val Gln Glu Pro Gly Arg  
                   35                                  40                                  45  
 Gly Ala Pro Leu Thr Phe Arg Ile Asp Arg Gly Arg Tyr Gly Leu Asp  
                   50                                  55                                  60  
 Ser Pro Lys Ala Glu Val Arg Gly Gln Val Leu Ala Pro Leu Pro Leu  
                   65                                  70                                  75                                  80  
 His Gly Val Ala Asp His Leu Gly Cys Asp Pro Gln Thr Arg Phe Phe  
                                   85                                  90                                  95  
 Val Pro Pro Asn Ile Lys Gln Trp Ile Ala Leu Leu Gln Arg Gly Asn  
                                   100                                  105                                  110  
 Cys Thr Phe Lys Glu Lys Ile Ser Arg Ala Ala Phe His Asn Ala Val  
                   115                                  120                                  125  
 Ala Val Val Ile Tyr Asn Asn Lys Ser Lys Glu Glu Pro Val Thr Met  
                   130                                  135                                  140  
 Thr His Pro Gly Thr Gly Asp Ile Ile Ala Val Met Ile Thr Glu Leu  
                   145                                  150                                  155                                  160  
 Arg Gly Lys Asp Ile Leu Ser Tyr Leu Glu Lys Asn Ile Ser Val Gln  
                                   165                                  170                                  175  
 Met Thr Ile Ala Val Gly Thr Arg Met Pro Pro Lys Asn Phe Ser Arg  
                                   180                                  185                                  190  
 Gly Ser Leu Val Phe Val Ser Ile Ser Phe Ile Val Leu Met Ile Ile  
                   195                                  200                                  205  
 Ser Ser Ala Trp Leu Ile Phe Tyr Phe Ile Gln Lys Ile Arg Tyr Thr  
                   210                                  215                                  220  
 Asn Ala Arg Asp Arg Asn Gln Arg Arg Leu Gly Asp Ala Ala Lys Lys  
                   225                                  230                                  235                                  240  
 Ala Ile Ser Lys Leu Thr Thr Arg Thr Val Lys Lys Gly Asp Lys Glu  
                                   245                                  250                                  255  
 Thr Asp Pro Asp Phe Asp His Cys Ala Val Cys Ile Glu Ser Tyr Lys  
                                   260                                  265                                  270  
 Gln Asn Asp Val Val Arg Ile Leu Pro Cys Lys His Val Phe His Lys  
                                   275                                  280                                  285  
 Ser Cys Val Asp Pro Trp Leu Ser Glu His Cys Thr Cys Pro Met Cys  
                   290                                  295                                  300  
 Lys Leu Asn Ile Leu Lys Ala Leu Gly Ile Val Pro Asn Leu Pro Cys  
                   305                                  310                                  315                                  320  
 Thr Asp Asn Val Ala Phe Asp Met Glu Arg Leu Thr Arg Thr Gln Ala  
                                   325                                  330                                  335

Val Asn Arg Arg Ser Ala Leu Gly Asp Leu Ala Gly Asp Asn Ser Leu  
                   340                  345                  350

Gly Leu Glu Pro Leu Arg Thr Ser Gly Ile Ser Pro Leu Pro Gln Asp  
                   355                  360                  365

Gly Glu Leu Thr Pro Arg Thr Gly Glu Ile Asn Ile Ala Val Thr Lys  
                   370                  375                  380

Glu Trp Phe Ile Ile Ala Ser Phe Gly Leu Leu Ser Ala Leu Thr Leu  
                   385                  390                  395                  400

Cys Tyr Met Ile Ile Arg Ala Thr Ala Ser Leu Asn Ala Asn Glu Val  
                   405                  410                  415

Glu Trp Phe

&lt;210&gt; 1688

&lt;211&gt; 143

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (120)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (142)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1688

Met Ala Phe Ser Lys Leu Leu Glu Gln Ala Gly Gly Val Gly Leu Phe  
   1                  5                  10                  15

Gln Thr Leu Gln Val Leu Thr Phe Ile Leu Pro Cys Leu Met Ile Pro  
                   20                  25                  30

Ser Gln Met Leu Leu Glu Asn Phe Ser Ala Ala Ile Pro Gly His Arg  
                   35                  40                  45

Cys Trp Thr His Met Leu Asp Asn Gly Ser Ala Val Ser Thr Asn Met  
                   50                  55                  60

Thr Pro Lys Ala Leu Leu Thr Ile Ser Ile Pro Pro Gly Pro Asn Gln  
                   65                  70                  75                  80

Gly Pro His Gln Cys Arg Arg Phe Arg Gln Pro Gln Trp Gln Leu Leu  
                   85                  90                  95

Asp Pro Asn Ala Thr Ala Thr Ser Trp Ser Glu Ala Asp Thr Glu Pro  
                   100                  105                  110

Cys Val Asp Gly Trp Val Tyr Xaa Arg Arg Ser Ser Pro Pro Pro Ser  
                   115                  120                  125

Trp Pro Ser Gly Thr Trp Cys Ala Ala Pro Arg Leu Glu Xaa Pro  
 130 135 140

<210> 1689

<211> 515

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (145)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (151)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (168)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1689

Met Ala Phe Ser Lys Leu Leu Glu Gln Ala Gly Gly Val Gly Leu Phe  
 1 5 10 15

Gln Thr Leu Gln Val Leu Thr Phe Ile Leu Pro Cys Leu Met Ile Pro  
 20 25 30

Ser Gln Met Leu Leu Glu Asn Phe Ser Ala Ala Ile Pro Gly His Arg  
 35 40 45

Cys Trp Thr His Met Leu Asp Asn Gly Ser Ala Val Ser Thr Asn Met  
 50 55 60

Thr Pro Lys Ala Leu Leu Thr Ile Ser Ile Pro Pro Gly Pro Asn Gln  
 65 70 75 80

Gly Pro His Gln Cys Arg Arg Phe Arg Gln Pro Gln Trp Gln Leu Leu  
 85 90 95

Asp Pro Asn Ala Thr Ala Thr Ser Trp Ser Glu Ala Asp Thr Glu Pro  
 100 105 110

Cys Val Asp Gly Trp Val Tyr Asp Arg Ser Val Phe Thr Ser Thr Ile  
 115 120 125

Val Ala Lys Trp Asp Leu Val Cys Ser Ser Gln Gly Leu Lys Pro Leu  
 130 135 140

Xaa Gln Ser Ile Phe Met Xaa Gly Ile Leu Val Gly Ser Phe Ile Trp  
 145 150 155 160

Gly Leu Leu Ser Tyr Arg Phe Xaa Arg Lys Pro Met Leu Ser Trp Cys  
 165 170 175

Cys Leu Gln Leu Ala Val Ala Gly Thr Ser Thr Ile Phe Ala Pro Thr

180										185					190				
Phe	Val	Ile	Tyr	Cys	Gly	Leu	Arg	Phe	Val	Ala	Ala	Phe	Gly	Met	Ala				
		195					200						205						
Gly	Ile	Phe	Leu	Ser	Ser	Leu	Thr	Leu	Met	Val	Glu	Trp	Thr	Thr	Thr				
	210					215					220								
Ser	Arg	Arg	Ala	Val	Thr	Met	Thr	Val	Val	Gly	Cys	Ala	Phe	Ser	Ala				
225					230					235					240				
Gly	Gln	Ala	Ala	Leu	Gly	Gly	Leu	Ala	Phe	Ala	Leu	Arg	Asp	Trp	Arg				
				245					250					255					
Thr	Leu	Gln	Leu	Ala	Ala	Ser	Val	Pro	Phe	Phe	Ala	Ile	Ser	Leu	Ile				
			260					265					270						
Ser	Trp	Trp	Leu	Pro	Glu	Ser	Ala	Arg	Trp	Leu	Ile	Ile	Lys	Gly	Lys				
	275						280					285							
Pro	Asp	Gln	Ala	Leu	Gln	Glu	Leu	Arg	Lys	Val	Ala	Arg	Ile	Asn	Gly				
	290					295					300								
His	Lys	Glu	Ala	Lys	Asn	Leu	Thr	Ile	Glu	Val	Leu	Met	Ser	Ser	Val				
305					310					315					320				
Lys	Glu	Glu	Val	Ala	Ser	Ala	Lys	Glu	Pro	Arg	Ser	Val	Leu	Asp	Leu				
			325						330					335					
Phe	Cys	Val	Pro	Val	Leu	Arg	Trp	Arg	Ser	Cys	Ala	Met	Leu	Val	Val				
			340					345					350						
Asn	Phe	Ser	Leu	Leu	Ile	Ser	Tyr	Tyr	Gly	Leu	Val	Phe	Asp	Leu	Gln				
		355					360					365							
Ser	Leu	Gly	Arg	Asp	Ile	Phe	Leu	Leu	Gln	Ala	Leu	Phe	Gly	Ala	Val				
	370					375					380								
Asp	Phe	Leu	Gly	Arg	Ala	Thr	Thr	Ala	Leu	Leu	Leu	Ser	Phe	Leu	Gly				
385					390					395					400				
Arg	Arg	Thr	Ile	Gln	Ala	Gly	Ser	Gln	Ala	Met	Gly	Gly	Leu	Ala	Ile				
				405					410					415					
Leu	Ala	Asn	Met	Leu	Val	Pro	Gln	Val	Arg	Met	Thr	Ala	Asp	Gly	Ile				
			420					425					430						
Leu	His	Thr	Val	Gly	Arg	Leu	Gly	Ala	Met	Met	Gly	Pro	Leu	Ile	Leu				
	435						440					445							
Met	Ser	Arg	Gln	Ala	Leu	Pro	Leu	Leu	Pro	Pro	Leu	Leu	Tyr	Gly	Val				
	450					455					460								
Ile	Ser	Ile	Ala	Ser	Ser	Leu	Val	Val	Leu	Phe	Phe	Leu	Pro	Glu	Thr				
465					470					475				480					
Gln	Gly	Leu	Pro	Leu	Pro	Asp	Thr	Ile	Gln	Asp	Leu	Glu	Ser	Gln	Lys				
				485					490					495					
Ser	Thr	Ala	Ala	Gln	Gly	Asn	Arg	Gln	Glu	Ala	Val	Thr	Val	Glu	Ser				

500

505

510

Thr Ser Leu  
515

&lt;210&gt; 1690

&lt;211&gt; 88

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1690

Met Asp Trp Trp Phe Leu Ala Ile Ala Met Ala Leu Leu Trp Leu Thr  
1 5 10 15

Thr Ser Arg Lys Gln Cys Cys Ser Thr Trp Ala Leu Leu Asn Tyr Met  
20 25 30

Ala Leu Met Ile Leu Ile Gly Glu Asn Pro Asp Leu Leu Val Asn Leu  
35 40 45

Asp Ser Leu Gln Glu Pro Val Cys Val Ile Leu Val Lys Gly Leu Leu  
50 55 60

Phe Gln Arg Ile Ala Ala Asn Leu Gln Pro Leu Val Leu His His His  
65 70 75 80

Thr Ile Gln Met Met Asn Lys Lys  
85

&lt;210&gt; 1691

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1691

Met Asp Trp Trp Phe Leu Ala Ile Ala Met Ala Leu Leu Trp Leu Thr  
1 5 10 15

Thr Ser Arg Lys Gln Cys Cys Ser Thr Trp Ala Leu Leu Asn Tyr Met  
20 25 30

Ala Leu Met Ile Leu Ile Gly Glu Asn Pro Asp Leu Leu Val Asn Leu  
35 40 45

Asp Ser Leu Gln Glu Pro Val Cys Val Ile Leu Val Lys Gly Leu Leu  
50 55 60

Phe Gln Arg Ile Ala Ala Asn Leu Gln Pro Leu Gln Arg Cys Gln Gly  
65 70 75 80

Ser

&lt;210&gt; 1692

<211> 462  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (148)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (149)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (204)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (292)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (303)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1692

Met Val Asp Tyr Leu Gln Lys Ala Val Leu Leu Asn Leu Gly Thr Ile  
 1 5 10 15

Glu Leu Tyr Gly Ser Asn Asp Pro Tyr Arg Arg Glu Pro Arg Ser Pro  
 20 25 30

Arg Lys Ser Arg Gln Pro Ser Gly Ala Gly Leu Cys Asp Ile Ser Glu  
 35 40 45

Gly Thr Val Val Pro Glu Asp Arg Cys Lys Ser Pro Thr Ser Ala Lys  
 50 55 60

Met Ser Arg Lys Leu Ser Leu Pro Thr Asp Leu Lys Pro Asp Leu Asp  
 65 70 75 80

Val Lys Asp Asn Ser Phe Ser Arg Ser Arg Ser Ser Ser Val Thr Ser  
 85 90 95

Ile Asp Lys Glu Ser Arg Glu Ala Ile Ser Ala Leu His Phe Cys Glu  
 100 105 110

Thr Phe Thr Arg Lys Thr Asp Ser Ser Pro Ser Pro Cys Leu Trp Val  
 115 120 125

Gly Thr Thr Leu Gly Thr Val Leu Val Ile Ala Leu Asn Leu Pro Pro  
 130 135 140

Gly Gly Glu Xaa Xaa Leu Leu Gln Pro Val Ile Val Ser Pro Ser Gly  
 145 150 155 160

Thr Ile Leu Arg Leu Lys Gly Ala Ile Leu Arg Met Ala Phe Leu Asp  
 165 170 175  
 Thr Thr Gly Cys Leu Ile Pro Pro Ala Tyr Glu Pro Trp Arg Glu His  
 180 185 190  
 Asn Val Pro Glu Glu Lys Asp Glu Lys Glu Lys Xaa Lys Lys Arg Arg  
 195 200 205  
 Pro Val Ser Val Ser Pro Ser Ser Ser Gln Glu Ile Ser Glu Asn Gln  
 210 215 220  
 Tyr Ala Val Ile Cys Ser Glu Lys Gln Ala Lys Val Ile Ser Leu Pro  
 225 230 235 240  
 Thr Gln Asn Cys Ala Tyr Lys Gln Asn Ile Thr Glu Thr Ser Phe Val  
 245 250 255  
 Leu Arg Gly Asp Ile Val Ala Leu Ser Asn Ser Ile Cys Leu Ala Cys  
 260 265 270  
 Phe Cys Ala Asn Gly His Ile Met Thr Phe Ser Leu Pro Ser Leu Arg  
 275 280 285  
 Pro Leu Leu Xaa Val Tyr Tyr Leu Pro Leu Thr Asn Met Arg Xaa Ala  
 290 295 300  
 Arg Thr Phe Cys Phe Thr Asn Asn Gly Gln Ala Leu Tyr Leu Val Ser  
 305 310 315 320  
 Pro Thr Glu Ile Gln Arg Leu Thr Tyr Ser Gln Glu Thr Cys Glu Asn  
 325 330 335  
 Leu Gln Glu Met Leu Gly Glu Leu Phe Thr Pro Val Glu Thr Pro Glu  
 340 345 350  
 Ala Pro Asn Arg Gly Phe Phe Lys Gly Leu Phe Gly Gly Gly Ala Gln  
 355 360 365  
 Ser Leu Asp Arg Glu Glu Leu Phe Gly Glu Ser Ser Ser Gly Lys Ala  
 370 375 380  
 Ser Arg Ser Leu Ala Gln His Ile Pro Gly Pro Gly Gly Ile Glu Gly  
 385 390 395 400  
 Val Lys Gly Ala Ala Ser Gly Val Val Gly Glu Leu Ala Arg Ala Arg  
 405 410 415  
 Leu Ala Leu Asp Glu Arg Gly Gln Lys Leu Gly Asp Leu Glu Glu Arg  
 420 425 430  
 Thr Ala Ala Met Leu Ser Ser Ala Glu Ser Phe Ser Lys His Ala His  
 435 440 445  
 Glu Ile Met Leu Lys Tyr Lys Asp Lys Lys Trp Tyr Gln Phe  
 450 455 460

&lt;210&gt; 1693



<211> 112  
 <212> PRT  
 <213> Homo sapiens

<400> 1693

```

Met Leu Ile Ser Gly Trp Ala Arg Trp Leu Met Pro Leu Val Pro Ala
 1             5             10             15

Leu Trp Glu Ala Glu Ala Gly Glu Ser Gly Val Gln Asp Gln Pro Gly
      20             25             30

Gln Cys Gly Glu Thr Leu Ser Leu Leu Lys Ile Lys Lys Lys Lys Lys
      35             40             45

Lys Lys Trp Leu Ile Ser Glu Ser Tyr Ser Gly Leu Asn Ser Val Ile
      50             55             60

Gln Pro Lys Leu Ile Thr Leu Cys Tyr Leu Trp Glu Pro His Leu Lys
      65             70             75             80

Ser Lys Asp Pro Asp Thr Cys Leu Ile Leu Trp Gln Gly Ser Asn Glu
      85             90             95

Ser Asn Lys Met Leu Val Lys Val Arg Thr Gly Ser Ile Leu Asn Thr
      100             105             110

```

<210> 1694  
 <211> 82  
 <212> PRT  
 <213> Homo sapiens

<220>

<221> SITE

<222> (45)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (76)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1694

```

Met Gly Leu Gln Ser Arg Leu Ser Gln Pro Cys His Cys Arg His Leu
 1             5             10             15

Gly Leu Gly Asn Ser Val Val Gly Thr Val Leu Phe Leu Val Gly Cys
      20             25             30

Leu Val Ala Ser Leu Pro Pro Pro Thr Arg Cys Gln Xaa His Cys Ser
      35             40             45

Pro Gln Pro Pro Ala Pro Val Val Thr Ile Val Ser Lys His Cys Gln
      50             55             60

Met Val Gln Gly Lys Gly Lys Ile Ala Pro Val Xaa Lys Ser Thr Ala

```

65

70

75

80

Val Lys

&lt;210&gt; 1695

&lt;211&gt; 82

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1695

Met	Gly	Leu	Gln	Ser	Arg	Leu	Ser	Gln	Pro	Cys	His	Cys	Arg	His	Leu
1				5					10					15	

Gly	Leu	Gly	Asn	Ser	Val	Val	Gly	Thr	Val	Leu	Phe	Leu	Val	Gly	Cys
			20					25					30		

Leu	Val	Ala	Ser	Leu	Pro	Pro	Pro	Thr	Arg	Cys	Gln	Gly	His	Cys	Ser
		35					40					45			

Pro	Gln	Pro	Pro	Ala	Pro	Val	Val	Thr	Ile	Val	Ser	Lys	His	Cys	Gln
	50					55					60				

Met	Val	Gln	Gly	Lys	Gly	Lys	Ile	Ala	Pro	Val	Glu	Lys	Ser	Thr	Ala
65					70					75					80

Val Lys

&lt;210&gt; 1696

&lt;211&gt; 193

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1696

Met	Gln	Leu	Gly	Thr	Leu	Leu	Thr	Phe	Phe	His	Glu	Leu	Val	Gln	Thr
1				5					10					15	

Ala	Leu	Pro	Ser	Gly	Ser	Cys	Val	Asp	Thr	Leu	Leu	Lys	Asp	Leu	Cys
			20					25					30		

Lys	Met	Tyr	Thr	Thr	Leu	Thr	Ala	Leu	Val	Arg	Tyr	Tyr	Leu	Gln	Val
	35						40					45			

Cys	Gln	Ser	Ser	Gly	Gly	Ile	Pro	Lys	Asn	Met	Glu	Lys	Leu	Val	Lys
	50					55					60				

Leu	Ser	Gly	Ser	His	Leu	Thr	Pro	Leu	Cys	Tyr	Ser	Phe	Ile	Ser	Tyr
65					70					75					80

Val	Gln	Asn	Lys	Ser	Lys	Ser	Leu	Asn	Tyr	Thr	Gly	Glu	Lys	Lys	Glu
				85					90					95	

Lys	Pro	Ala	Ala	Val	Ala	Thr	Ala	Met	Ala	Arg	Val	Leu	Arg	Glu	Thr
			100					105					110		

Lys Pro Ile Pro Asn Leu Ile Phe Ala Ile Glu Gln Tyr Glu Lys Phe  
           115                          120                          125  
 Leu Ile His Leu Ser Lys Lys Ser Lys Val Asn Leu Met Gln His Met  
           130                          135                          140  
 Lys Leu Ser Thr Ser Arg Asp Phe Lys Ile Lys Gly Asn Ile Leu Asp  
 145                          150                          155                          160  
 Met Val Leu Arg Glu Asp Gly Glu Asp Glu Asn Glu Glu Gly Thr Ala  
                           165                          170                          175  
 Ser Glu His Gly Gly Gln Asn Lys Glu Pro Ala Lys Lys Lys Arg Lys  
                           180                          185                          190  
 Lys

<210> 1697  
 <211> 193  
 <212> PRT  
 <213> Homo sapiens

<400> 1697  
 Met Gln Leu Gly Thr Leu Leu Thr Phe Phe His Glu Leu Val Gln Thr  
   1                          5                          10                          15  
 Ala Leu Pro Ser Gly Ser Cys Val Asp Thr Leu Leu Lys Asp Leu Cys  
                           20                          25                          30  
 Lys Met Tyr Thr Thr Leu Thr Ala Leu Val Arg Tyr Tyr Leu Gln Val  
                           35                          40                          45  
 Cys Gln Ser Ser Gly Gly Ile Pro Lys Asn Met Glu Lys Leu Val Lys  
   50                          55                          60  
 Leu Ser Gly Ser His Leu Thr Pro Leu Cys Tyr Ser Phe Ile Ser Tyr  
   65                          70                          75                          80  
 Val Gln Asn Lys Ser Lys Ser Leu Asn Tyr Thr Gly Glu Lys Lys Glu  
                           85                          90                          95  
 Lys Pro Ala Ala Val Ala Thr Ala Met Ala Arg Val Leu Arg Glu Thr  
                           100                          105                          110  
 Lys Pro Ile Pro Asn Leu Ile Phe Ala Ile Glu Gln Tyr Glu Lys Phe  
                           115                          120                          125  
 Leu Ile His Leu Ser Lys Lys Ser Lys Val Asn Leu Met Gln His Met  
                           130                          135                          140  
 Lys Leu Ser Thr Ser Arg Asp Phe Lys Ile Lys Gly Asn Ile Leu Asp  
 145                          150                          155                          160  
 Met Val Leu Arg Glu Asp Gly Glu Asp Glu Asn Glu Glu Gly Thr Ala  
                           165                          170                          175  
 Ser Glu His Gly Gly Gln Asn Lys Glu Pro Ala Lys Lys Lys Arg Lys

180

185

190

Lys

&lt;210&gt; 1698

&lt;211&gt; 22

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1698

Met Val Cys Asp Ser Leu Pro Arg His Asp Phe His Pro Ala Arg Leu  
 1 5 10 15

His Pro Thr Arg Phe Leu  
 20

&lt;210&gt; 1699

&lt;211&gt; 271

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1699

Met Leu Ser Glu Lys His Leu Ile Ser Val Cys Ala Asp Asn Asn His  
 1 5 10 15

Val Arg Thr Trp Ser Val Thr Arg Phe Arg Gly Met Ile Ser Thr Gln  
 20 25 30

Pro Gly Ser Thr Pro Leu Ala Ser Phe Lys Ile Leu Ala Leu Glu Ser  
 35 40 45

Ala Asp Gly His Gly Gly Cys Ser Ala Gly Asn Asp Ile Gly Pro Tyr  
 50 55 60

Gly Glu Arg Asp Asp Gln Gln Val Phe Ile Gln Lys Val Val Pro Ser  
 65 70 75 80

Ala Ser Gln Leu Phe Val Arg Leu Ser Ser Thr Gly Gln Arg Val Cys  
 85 90 95

Ser Val Arg Ser Val Asp Gly Ser Pro Thr Thr Ala Phe Thr Val Leu  
 100 105 110

Glu Cys Glu Gly Ser Arg Arg Leu Gly Ser Arg Pro Arg Arg Tyr Leu  
 115 120 125

Leu Thr Gly Gln Ala Asn Gly Ser Leu Ala Met Trp Asp Leu Thr Thr  
 130 135 140

Ala Met Asp Gly Leu Gly Gln Ala Pro Ala Gly Gly Leu Thr Glu Gln  
 145 150 155 160

Glu Leu Met Glu Gln Leu Glu His Cys Glu Leu Ala Pro Pro Ala Pro  
 165 170 175

Ser Ala Pro Ser Trp Gly Cys Leu Pro Ser Pro Ser Pro Arg Ile Ser  
 180 185 190

Leu Thr Ser Leu His Ser Ala Ser Ser Asn Thr Ser Leu Ser Gly His  
 195 200 205

Arg Gly Ser Pro Ser Pro Pro Gln Ala Glu Ala Arg Arg Arg Gly Gly  
 210 215 220

Gly Ser Phe Val Glu Arg Cys Gln Glu Leu Val Arg Ser Gly Pro Asp  
 225 230 235 240

Leu Arg Arg Pro Pro Thr Pro Ala Pro Trp Pro Ser Ser Gly Leu Gly  
 245 250 255

Thr Pro Leu Thr Pro Pro Lys Met Lys Leu Asn Glu Thr Ser Phe  
 260 265 270

&lt;210&gt; 1700

&lt;211&gt; 148

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (71)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (125)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1700

Met Arg Ser Ser Cys Val Leu Leu Thr Ala Leu Val Ala Leu Ala Ala  
 1 5 10 15

Tyr Tyr Val Tyr Ile Pro Leu Pro Gly Ser Val Ser Asp Pro Trp Lys  
 20 25 30

Leu Met Leu Leu Asp Ala Thr Phe Arg Gly Ala Gln Gln Val Ser Asn  
 35 40 45

Leu Ile His Tyr Leu Gly Leu Ser His His Leu Leu Ala Leu Asn Phe  
 50 55 60

Ile Ile Val Ser Phe Gly Xaa Lys Ser Ala Trp Ser Ser Ala Gln Val  
 65 70 75 80

Lys Val Thr Asp Thr Asp Phe Asp Gly Val Glu Val Arg Val Phe Glu  
 85 90 95

Gly Pro Pro Lys Pro Glu Glu Pro Leu Lys Arg Ser Val Val Tyr Ile  
 100 105 110

His Gly Gly Gly Trp Ala Leu Ala Ser Ala Lys Ile Xaa Tyr Tyr Asp  
 115 120 125

Glu Leu Cys Thr Ala Met Ala Glu Glu Leu Asn Ala Ala Leu Phe Pro  
 130 135 140

Leu Asn Thr Gly  
 145

<210> 1701

<211> 148

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (71)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (125)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1701

Met Arg Ser Ser Cys Val Leu Leu Thr Ala Leu Val Ala Leu Ala Ala  
 1 5 10 15

Tyr Tyr Val Tyr Ile Pro Leu Pro Gly Ser Val Ser Asp Pro Trp Lys  
 20 25 30

Leu Met Leu Leu Asp Ala Thr Phe Arg Gly Ala Gln Gln Val Ser Asn  
 35 40 45

Leu Ile His Tyr Leu Gly Leu Ser His His Leu Leu Ala Leu Asn Phe  
 50 55 60

Ile Ile Val Ser Phe Gly Xaa Lys Ser Ala Trp Ser Ser Ala Gln Val  
 65 70 75 80

Lys Val Thr Asp Thr Asp Phe Asp Gly Val Glu Val Arg Val Phe Glu  
 85 90 95

Gly Pro Pro Lys Pro Glu Glu Pro Leu Lys Arg Ser Val Val Tyr Ile  
 100 105 110

His Gly Gly Gly Trp Ala Leu Ala Ser Ala Lys Ile Xaa Tyr Tyr Asp  
 115 120 125

Glu Leu Cys Thr Ala Met Ala Glu Glu Leu Asn Ala Ala Leu Phe Pro  
 130 135 140

Leu Asn Thr Gly  
 145

<210> 1702

<211> 408

<212> PRT

<213> Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (223)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1702

Met	Arg	Ser	Ser	Cys	Val	Leu	Leu	Thr	Ala	Leu	Val	Ala	Leu	Ala	Ala
1				5					10					15	
Tyr	Tyr	Val	Tyr	Ile	Pro	Leu	Pro	Gly	Ser	Val	Ser	Asp	Pro	Trp	Lys
			20					25					30		
Leu	Met	Leu	Leu	Asp	Ala	Thr	Phe	Arg	Gly	Ala	Gln	Gln	Val	Ser	Asn
		35					40					45			
Leu	Ile	His	Tyr	Leu	Gly	Leu	Ser	His	His	Leu	Leu	Ala	Leu	Asn	Phe
	50					55					60				
Ile	Ile	Val	Ser	Phe	Gly	Gln	Lys	Ser	Ala	Trp	Ser	Ser	Ala	Gln	Val
65					70					75					80
Lys	Val	Thr	Asp	Thr	Asp	Phe	Asp	Gly	Val	Glu	Val	Arg	Val	Phe	Glu
				85					90					95	
Gly	Pro	Pro	Lys	Pro	Glu	Glu	Pro	Leu	Lys	Arg	Ser	Val	Val	Tyr	Ile
			100					105					110		
His	Gly	Gly	Gly	Trp	Ala	Leu	Ala	Ser	Ala	Lys	Ile	Ser	Tyr	Tyr	Asp
		115					120					125			
Glu	Leu	Cys	Thr	Ala	Met	Ala	Glu	Glu	Leu	Asn	Ala	Val	Ile	Val	Ser
	130					135					140				
Ile	Glu	Tyr	Arg	Leu	Val	Pro	Lys	Val	Tyr	Phe	Pro	Glu	Gln	Ile	His
145					150					155					160
Asp	Val	Val	Arg	Ala	Thr	Lys	Tyr	Phe	Leu	Lys	Pro	Glu	Val	Leu	Gln
				165					170					175	
Lys	Tyr	Met	Val	Asp	Pro	Gly	Arg	Ile	Cys	Ile	Ser	Gly	Asp	Ser	Ala
			180					185					190		
Gly	Gly	Asn	Leu	Ala	Ala	Ala	Leu	Gly	Gln	Gln	Phe	Thr	Gln	Asp	Ala
		195					200					205			
Ser	Leu	Lys	Asn	Lys	Leu	Lys	Leu	Gln	Ala	Leu	Ile	Tyr	Pro	Xaa	Leu
	210					215					220				
Gln	Ala	Leu	Asp	Phe	Asn	Thr	Pro	Ser	Tyr	Gln	Gln	Asn	Val	Asn	Thr
225					230					235					240
Pro	Ile	Leu	Pro	Arg	Tyr	Val	Met	Val	Lys	Tyr	Trp	Val	Asp	Tyr	Phe
				245					250					255	
Lys	Gly	Asn	Tyr	Asp	Phe	Val	Gln	Ala	Met	Ile	Val	Asn	Asn	His	Thr
		260						265					270		
Ser	Leu	Asp	Val	Glu	Glu	Ala	Ala	Ala	Val	Arg	Ala	Arg	Leu	Asn	Trp
	275						280					285			

Thr Ser Leu Leu Pro Ala Ser Phe Thr Lys Asn Tyr Lys Pro Val Val  
 290 295 300  
 Gln Thr Thr Gly Asn Ala Arg Ile Val Gln Glu Leu Pro Gln Leu Leu  
 305 310 315 320  
 Asp Ala Arg Ser Ala Pro Leu Ile Ala Asp Gln Ala Val Leu Gln Leu  
 325 330 335  
 Leu Pro Lys Thr Tyr Ile Leu Thr Cys Glu His Asp Val Leu Arg Asp  
 340 345 350  
 Asp Gly Ile Met Tyr Ala Lys Arg Leu Glu Ser Ala Gly Val Glu Val  
 355 360 365  
 Thr Leu Asp His Phe Glu Asp Gly Phe His Gly Cys Met Ile Phe Thr  
 370 375 380  
 Ser Trp Pro Thr Asn Phe Ser Val Gly Ile Arg Thr Arg Asn Ser Tyr  
 385 390 395 400  
 Ile Lys Trp Leu Asp Gln Asn Leu  
 405

<210> 1703  
 <211> 88  
 <212> PRT  
 <213> Homo sapiens

<400> 1703  
 Met Met Phe Cys Phe Val Leu Phe Leu Arg Trp Ser Leu Ala Leu Leu  
 1 5 10 15  
 Pro Gly Trp Leu Ala Val Ala Arg Ser Arg Leu Thr Ala Ile Ser Cys  
 20 25 30  
 Phe Leu Gly Leu Ser Asp Ser Pro Ala Leu Ala Ser Arg Val Ala Gly  
 35 40 45  
 Thr Thr Gly Ala His His His Ala Arg Leu Val Phe Cys Ile Leu Val  
 50 55 60  
 Glu Thr Val Ser Pro Cys Trp Pro Gly Trp Ser Arg Ser Pro Asp Phe  
 65 70 75 80  
 Val Ile Cys Leu Pro Gln Thr Pro  
 85

<210> 1704  
 <211> 88  
 <212> PRT  
 <213> Homo sapiens

<400> 1704  
 Met Met Phe Cys Phe Val Leu Phe Leu Arg Trp Ser Leu Ala Leu Leu



[illegible]

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<210> 1705
<211> 94
<212> PRT
<213> Homo sapiens
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<400> 1705
Met Ile Gly Tyr Arg Leu Cys Leu His Leu Leu Ser Leu Leu Gly Phe
  1                               10                      15

Gln Pro Leu Pro Met Gly Leu Cys Arg Val Arg Glu Gln Lys Phe Lys
      20                               25                      30

Gln Phe Ser Gly Leu Ser His Phe Ser Phe Arg Ile Ser Pro Val Thr
      35                               40                      45

Phe Pro Ser Tyr Val His Ala Asp Ser Gln Pro Thr Arg Asp Lys Trp
      50                               55                      60

Val Pro Trp Asp Leu Ser Phe Thr Cys Met Cys Ala Glu Ala Ser
      65                               70                      75                      80

Lys Ser Ala Arg Asn Val Trp Thr Ala Leu Gln Thr Pro Leu
      85                               90

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<210> 1706
<211> 61
<212> PRT
<213> Homo sapiens
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<400> 1706
Ser Gln His Phe Gly Arg Pro Arg Trp Lys Asp Cys Leu Lys Pro Gly
  1             5             10             15
Val Arg Asp Gln Pro Gly Gln His Ser Lys Thr Pro Ser Leu Cys Lys
          20             25             30
Lys Lys Gly Ile Ile Leu Tyr Phe Leu Leu Ile Arg Phe Ile Cys Val
      35             40             45

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Ser Asn Leu His Leu Gln Phe Asp Phe Phe Ser Asp Leu  
 50 55 60

<210> 1707  
 <211> 101  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (69)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1707  
 Val Ile Phe Phe Phe Phe Ser Cys Arg Glu Arg Val Cys Val Ala  
 1 5 10 15  
 Gln Ala Gly Leu Asn Phe Met Ala Ser Ser Tyr Ser Ala Ser Ala Ser  
 20 25 30  
 Arg Ser Ala Gly Asn Ile Gly Met Ser His His Thr Gln Pro Leu Cys  
 35 40 45  
 Leu Leu Ser Phe Ser Ile Ile Ile Asn Leu Phe Met Phe Ile His Ser  
 50 55 60  
 Pro Val Asp Glu Xaa Leu Gly Cys Phe Gln Phe Trp Ala Val Thr Asn  
 65 70 75 80  
 Lys Ala Pro Gly Asn Ile Cys Val Gln Lys Lys Lys Lys Lys Lys  
 85 90 95  
 Lys Lys Lys Lys Lys  
 100

<210> 1708  
 <211> 123  
 <212> PRT  
 <213> Homo sapiens

<400> 1708  
 Met Ala Trp Pro Asn Val Phe Gln Arg Gly Ser Leu Leu Ser Gln Phe  
 1 5 10 15  
 Ser His His His Val Val Val Phe Leu Leu Thr Phe Phe Ser Tyr Ser  
 20 25 30  
 Leu Leu His Ala Ser Arg Lys Thr Phe Ser Asn Val Lys Val Ser Ile  
 35 40 45  
 Ser Glu Gln Trp Thr Pro Ser Ala Phe Asn Thr Ser Val Glu Leu Pro  
 50 55 60  
 Leu Glu Ile Trp Ser Ser Asn His Leu Phe Pro Ser Ala Glu Lys Ala  
 65 70 75 80

Thr Leu Phe Leu Gly Thr Leu Asp Thr Ile Phe Leu Phe Ser Tyr Ala  
                             85                            90                            95

Val Gly Leu Phe Ile Ser Gly Ile Val Gly Asp Arg Leu Asn Leu Arg  
                             100                            105                            110

Trp Val Leu Leu Leu Ala Cys Ala Leu Leu His  
                             115                            120

&lt;210&gt; 1709

&lt;211&gt; 160

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (7)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1709

Leu Pro Asn Cys Tyr Leu Xaa Asp Thr Ile Glu Gly Thr Pro Ala Gly  
   1                            5                            10                            15

Thr Gly Pro Glu Phe Ala Ala Ala Ser Thr Ser Leu Lys Glu Cys Arg  
                             20                            25                            30

Ala Val Ile Ile Ala Ser Arg Gly Gln Pro Val Trp Pro Ala Leu Leu  
                             35                            40                            45

Asp Val His Ala Val Asp Asp Phe Val Val Ser Cys Asn Leu Ala His  
                             50                            55                            60

Arg Arg Ala Thr Ile Pro Glu Glu Asp Cys Ser Lys Leu Leu Pro Ser  
   65                            70                            75                            80

Phe Pro Asp His Gly Asp Pro Leu Thr Val Phe Ser Pro Ser Asn Val  
                             85                            90                            95

Phe Asp Leu Pro Ser Glu Arg Leu Val Leu Ile Leu Gln Gln Val Leu  
                             100                            105                            110

Leu Leu Arg Gly Ile Pro Asp Pro Gln Leu Pro Arg His Ile Ser Gly  
                             115                            120                            125

Gly Asn Val Glu Ser Ala Gly Arg Ile Leu Gly His His His Leu Met  
   130                            135                            140

Gly Val Leu Cys Val Asp Val Ser Lys Gly Trp Val Val Asp Val Pro  
   145                            150                            155                            160

&lt;210&gt; 1710

&lt;211&gt; 21

&lt;212&gt; PRT

<213> Homo sapiens

<400> 1710

His His His Leu Met Gly Val Leu Cys Val Asp Val Ser Lys Gly Trp  
1 5 10 15

Val Val Asp Val Pro  
20

<210> 1711

<211> 185

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (163)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1711

Met Ala Trp Pro Asn Val Phe Gln Arg Gly Ser Leu Leu Ser Gln Phe  
1 5 10 15

Ser His His His Val Val Val Phe Leu Leu Thr Phe Phe Ser Tyr Ser  
20 25 30

Leu Leu His Ala Ser Arg Lys Thr Phe Ser Asn Val Lys Val Ser Ile  
35 40 45

Ser Glu Gln Trp Thr Pro Ser Ala Phe Asn Thr Ser Val Glu Leu Pro  
50 55 60

Leu Glu Ile Trp Ser Ser Asn His Leu Phe Pro Ser Ala Glu Lys Ala  
65 70 75 80

Thr Leu Phe Leu Gly Thr Leu Asp Thr Ile Phe Leu Phe Ser Tyr Ala  
85 90 95

Val Gly Leu Phe Ile Ser Gly Ile Val Gly Asp Arg Leu Asn Leu Arg  
100 105 110

Trp Val Leu Ser Phe Gly Met Cys Ser Ser Ala Leu Val Val Phe Val  
115 120 125

Phe Gly Ala Leu Thr Glu Trp Leu Arg Phe Tyr Asn Lys Trp Leu Tyr  
130 135 140

Cys Cys Leu Trp Ile Val Asn Gly Leu Leu Gln Ser Thr Gly Trp Pro  
145 150 155 160

Cys Val Xaa Ala Val Met Gly Asn Trp Phe Gly Lys Ala Gly Tyr Ala  
165 170 175

Thr Ser Phe Leu Ser Asn Phe Ser Val  
180 185

<210> 1712  
 <211> 102  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (13)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (14)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1712  
 Met Arg Val Ser Cys Ser Arg Ser Cys Cys Ser Leu Xaa Xaa Ile Ser  
           1                  5                  10                  15  
 Leu Ser Leu Arg Leu Val Ala Ser Cys Leu Pro Cys Cys Leu Cys Leu  
                   20                  25                  30  
 Ser Ala Ala Pro Arg Met Gln Glu Glu Pro Gly His Leu Arg Pro Ser  
           35                  40                  45  
 Arg Ala Arg Pro Leu Glu Gly Pro Ser Trp Asp Ser Pro Ser Leu Ala  
           50                  55                  60  
 Pro Pro Ala Ser Ala Gln Arg Pro Leu Pro Pro Pro Val Ser Arg Ile  
           65                  70                  75                  80  
 Leu Pro Ala Thr Ser Gly Arg Ala Gly Arg Trp Cys Gly Trp Ala Pro  
                   85                  90                  95  
 Cys Pro Lys Thr Ala Ala  
                   100

<210> 1713  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (31)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1713  
 Val Trp Ala Arg Trp Pro Met Leu Ser Ile Pro Ala Ala Gln Gly Gly  
           1                  5                  10                  15  
 Arg Leu Leu Glu Pro Lys His Ser Arg Leu Ala Trp Glu Thr Xaa Gln  
           20                  25                  30  
 Asp Pro Val Ser Thr Lys Thr Phe Lys Met Ser Gln Val Ala Gly Cys  
           35                  40                  45  
 Gly Gly Ser Cys Leu

50

&lt;210&gt; 1714

&lt;211&gt; 173

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1714

Met Leu Gln Pro Ala Pro Tyr Lys Pro Leu Pro Glu Val Gly Gly Leu  
 1 5 10 15

Leu Ser Ser Leu Leu Pro Leu Pro Leu Cys Ser Pro Gln Asp Ala Gly  
 20 25 30

Gly Ala Trp Thr Pro Ser Ala Gln Ser Gly Gln Ala Ser Gly Arg Pro  
 35 40 45

Phe Met Gly Leu Ser Ile Leu Gly Pro Ala Gly Leu Arg Pro Thr Ser  
 50 55 60

Ser Ser Ser Ser Ser Phe Pro Tyr Pro Ser Arg His Phe Gly Gln Gly  
 65 70 75 80

Trp Glu Val Val Arg Met Gly Ala Met Pro Gln Asn Ser Ser Leu Ser  
 85 90 95

Thr Ala Val Pro Ser Gly Met Gly Asp Gly Cys Gln Val Phe Trp Pro  
 100 105 110

Pro Ala Pro Cys Arg Ser Gln Leu Ser Pro Pro Ala Ser Gly Ser Phe  
 115 120 125

Pro Leu Phe Ser Pro Leu Gln Ala Pro Pro Ser Pro Ser Ser Asp Pro  
 130 135 140

Ala Gln Ala Pro Gly Ser Cys Gly Ser Ser Ser Gln Pro Arg His Ala  
 145 150 155 160

Pro Cys Ser Pro Pro Leu Pro Leu Ala Ala Pro Ser Ser  
 165 170

&lt;210&gt; 1715

&lt;211&gt; 102

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1715

Met Arg Val Ser Cys Ser Arg Ser Cys Cys Ser Leu Pro Pro Ile Ser  
 1 5 10 15

Leu Ser Leu Arg Leu Val Ala Ser Cys Leu Pro Cys Cys Leu Cys Leu  
 20 25 30

Ser Ala Ala Pro Arg Met Gln Glu Glu Pro Gly His Leu Arg Pro Ser  
 35 40 45

Arg Ala Arg Pro Leu Glu Gly Pro Ser Trp Asp Ser Pro Ser Leu Ala  
 50 55 60

Pro Pro Ala Ser Ala Gln Arg Pro Leu Pro Pro Pro Val Ser Arg Ile  
 65 70 75 80

Leu Pro Ala Thr Ser Gly Arg Ala Gly Arg Trp Cys Gly Trp Ala Pro  
 85 90 95

Cys Pro Lys Thr Ala Ala  
 100

&lt;210&gt; 1716

&lt;211&gt; 180

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (140)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1716

Met Pro Ala Pro Ala Arg Ser Cys Gln Arg Ala Ala Leu Ser Leu Trp  
 1 5 10 15

Ala Ser Gly Leu Gly Trp Leu Ser Ala Gln Pro Thr Val Ala Phe Arg  
 20 25 30

Gly Ser Ser Trp Asp Trp Glu Pro Gln Gly Gln Ala Asp Gly Val  
 35 40 45

Arg Phe Val Leu Gly Leu Val Leu Pro Met Leu Gly Gly Gly Gly Ala  
 50 55 60

Pro Arg Thr Asp Gln Pro Cys Phe Ser Cys Asn Ala Val Thr Leu Ser  
 65 70 75 80

Leu Asn Thr Trp Ile His Val Trp Pro Gly Leu Ala Gly Ser Arg Ser  
 85 90 95

Pro Ala Arg Val Gly Ser His Gly Pro Ala Leu Glu Pro Pro Ser Gly  
 100 105 110

Pro Gly Ala Ala Glu Ala Ala Ser Glu Gly Leu Pro Arg Pro Ala Phe  
 115 120 125

His Arg Trp Gly Ala Gln Pro Ser Lys Ala Ala Xaa Thr Pro Pro Arg  
 130 135 140

Pro Val Cys Gln Gly Ala Gly His Asn Pro Ala Gly Pro Arg Thr Gly  
 145 150 155 160

Leu Gln Ala Ser Pro Cys Ala Pro Ala Gly Arg Pro Cys Ser Arg Glu  
 165 170 175

Glu Val Leu Gly  
 180

<210> 1717  
 <211> 131  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (24)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (122)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (123)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1717  
 Glu Ala Lys Gly Thr Ala Met Gln Arg Pro Trp Gly Arg Thr Ala Pro  
     1                    5                    10                    15  
 Gly Met Arg Glu Glu Gln Ser Xaa Glu Arg Arg Ala Gly Arg Ala Gly  
                     20                    25                    30  
 Pro Cys Gly Pro Gln Gly Gly Leu Gly His Leu Pro Arg Gly Ser Gly  
                     35                    40                    45  
 Ala Pro Gly Cys Val Ser Arg Trp Glu Arg Gln Gly Arg Ile Cys Gly  
                     50                    55                    60  
 Asp Leu Thr Arg Ala Gly Glu Ala Glu Thr Arg Val Gln Pro Pro Pro  
     65                    70                    75                    80  
 Pro Lys Ala Gly Pro Ser Gln Arg Arg Gly Arg Ala Gly Gln Glu Val  
                     85                    90                    95  
 Ser Gly Cys Leu Leu Gly Leu Val Trp Phe Cys Phe Val Leu Phe Ile  
                     100                    105                    110  
 Val Val Lys Tyr Lys Ile Tyr Arg Leu Xaa Xaa Lys Lys Lys Lys Lys  
                     115                    120                    125  
 Gly Arg Pro  
     130

<210> 1718  
 <211> 180  
 <212> PRT  
 <213> Homo sapiens

<400> 1718  
 Met Pro Ala Pro Ala Arg Ser Cys Gln Arg Ala Ala Leu Ser Leu Trp



1	5	10	15
Ala Ser Gly Leu Gly Trp Leu Ser Ala Gln Pro Thr Val Ala Phe Arg	20	25	30
Gly Ser Ser Trp Asp Trp Glu Pro Pro Gln Gly Gln Ala Asp Gly Val	35	40	45
Arg Phe Val Leu Gly Leu Val Leu Pro Met Leu Gly Gly Gly Gly Ala	50	55	60
Pro Arg Thr Asp Gln Pro Cys Phe Ser Cys Asn Ala Val Thr Leu Ser	65	70	75
Leu Asn Thr Trp Ile His Val Trp Pro Gly Leu Ala Gly Ser Arg Ser	85	90	95
Pro Ala Arg Val Gly Ser His Gly Pro Ala Leu Glu Pro Pro Ser Gly	100	105	110
Pro Gly Ala Ala Glu Ala Ala Ser Glu Gly Leu Pro Arg Pro Ala Phe	115	120	125
His Arg Trp Gly Ala Gln Pro Ser Lys Ala Ala Glu Thr Pro Pro Arg	130	135	140
Pro Val Cys Gln Gly Ala Gly His Asn Pro Ala Gly Pro Arg Thr Gly	145	150	155
Leu Gln Ala Ser Pro Cys Ala Pro Ala Gly Arg Pro Cys Ser Arg Glu	165	170	175
Glu Val Leu Gly	180		

&lt;210&gt; 1719

&lt;211&gt; 177

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (120)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (124)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (126)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (148)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (171)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (172)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1719

Met Val Gly Lys Ile Lys Arg Leu Lys Lys Ser Ala Phe Val Val Leu  
1 5 10 15

Ile Leu Leu Ile Thr Ala Lys Leu Leu Val Leu Pro Leu Leu Cys Arg  
20 25 30

Glu Met Val Glu Leu Leu Asp Lys Gly Asp Ser Val Val Asn His Thr  
35 40 45

Ser Leu Ser Asn Tyr Ala Phe Leu Tyr Gly Val Phe Pro Val Ala Pro  
50 55 60

Gly Val Ala Ile Phe Ala Thr Gln Phe Asn Met Glu Val Glu Ile Ile  
65 70 75 80

Thr Ser Gly Met Val Ile Ser Thr Phe Val Ser Ala Pro Ile Met Tyr  
85 90 95

Val Ser Ala Trp Leu Leu Thr Phe Pro Thr Met Asp Pro Lys Pro Leu  
100 105 110

Ala Tyr Ala Ile Gln Asn Val Xaa Phe Asp Ile Xaa Ile Xaa Ser Leu  
115 120 125

Ile Ser Leu Ile Trp Ser Leu Ala Ile Leu Leu Leu Ser Lys Lys Tyr  
130 135 140

Lys Gln Leu Xaa His Met Leu Thr Thr Asn Leu Leu Ile Ala Gln Ser  
145 150 155 160

Ile Val Cys Ala Gly Met Met Ile Trp Asn Xaa Xaa Lys Glu Lys Asn  
165 170 175

Phe

<210> 1720

<211> 447

<212> PRT

<213> Homo sapiens

<400> 1720

Thr Thr Thr Lys Phe Ala Ala Ala Ser Thr Phe His Pro Ala Ser Lys  
1 5 10 15

Ser Asn Ile Lys Lys Val Trp Met Ala Glu Gln Lys Ile Ser Tyr Asp  
 20 25 30  
 Lys Lys Lys Gln Glu Glu Leu Met Gln Gln Tyr Leu Lys Glu Gln Glu  
 35 40 45  
 Ser Tyr Asp Asn Arg Leu Leu Met Gly Asp Glu Arg Val Lys Asn Gly  
 50 55 60  
 Leu Asn Phe Met Tyr Glu Ala Pro Pro Gly Ala Lys Lys Glu Asn Lys  
 65 70 75 80  
 Glu Lys Glu Glu Thr Glu Gly Glu Thr Glu Tyr Lys Phe Glu Trp Gln  
 85 90 95  
 Lys Gly Ala Pro Arg Glu Lys Tyr Ala Lys Asp Asp Met Asn Ile Arg  
 100 105 110  
 Asp Gln Pro Phe Gly Ile Gln Val Arg Asn Val Arg Cys Ile Lys Cys  
 115 120 125  
 His Lys Trp Gly His Val Asn Thr Asp Arg Glu Cys Pro Leu Phe Gly  
 130 135 140  
 Leu Ser Gly Ile Asn Ala Ser Ser Val Pro Thr Asp Gly Ser Gly Pro  
 145 150 155 160  
 Ser Met His Pro Ser Glu Leu Ile Ala Glu Met Arg Asn Ser Gly Phe  
 165 170 175  
 Ala Leu Lys Arg Asn Val Leu Gly Arg Asn Leu Thr Ala Asn Asp Pro  
 180 185 190  
 Ser Gln Glu Tyr Val Ala Ser Glu Gly Glu Glu Asp Pro Glu Val Glu  
 195 200 205  
 Phe Leu Lys Ser Leu Thr Thr Lys Gln Lys Gln Lys Leu Leu Arg Lys  
 210 215 220  
 Leu Asp Arg Leu Glu Lys Lys Lys Lys Lys Asp Arg Lys Lys Lys  
 225 230 235 240  
 Lys Phe Gln Lys Ser Arg Ser Lys His Lys Lys His Lys Ser Ser Ser  
 245 250 255  
 Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Ser Thr Glu Thr Ser Glu  
 260 265 270  
 Ser Ser Ser Glu Ser Glu Ser Asn Asn Lys Glu Lys Lys Ile Gln Arg  
 275 280 285  
 Lys Lys Arg Lys Lys Asn Lys Cys Ser Gly His Asn Asn Ser Asp Ser  
 290 295 300  
 Glu Glu Lys Asp Lys Ser Lys Lys Arg Lys Leu His Glu Glu Leu Ser  
 305 310 315 320  
 Ser Ser His His Asn Arg Glu Lys Ala Lys Glu Lys Pro Arg Phe Leu  
 325 330 335

Lys His Glu Ser Ser Arg Glu Asp Ser Lys Trp Ser His Ser Asp Ser  
                   340                  345                  350  
 Asp Lys Lys Ser Arg Thr His Lys His Ser Pro Glu Lys Arg Gly Ser  
                   355                  360                  365  
 Glu Arg Lys Glu Gly Ser Ser Arg Ser His Gly Arg Glu Glu Arg Ser  
                   370                  375                  380  
 Arg Arg Ser Arg Ser Arg Ser Pro Gly Ser Tyr Lys Gln Arg Glu Thr  
                   385                  390                  395                  400  
 Arg Lys Arg Ala Gln Arg Asn Pro Gly Glu Glu Gln Ser Arg Arg Asn  
                   405                  410                  415  
 Asp Ser Arg Ser His Gly Thr Asp Leu Tyr Arg Gly Glu Lys Met Tyr  
                   420                  425                  430  
 Arg Glu His Pro Gly Gly Thr His Thr Lys Val Thr Gln Arg Glu  
                   435                  440                  445

&lt;210&gt; 1721

&lt;211&gt; 177

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (98)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (134)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (148)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (171)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (172)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1721

Met Val Gly Lys Ile Lys Arg Leu Lys Lys Ser Ala Phe Val Val Leu  
   1                  5                  10                  15

Ile Leu Leu Ile Thr Ala Lys Leu Leu Val Leu Pro Leu Leu Cys Arg  
                   20                  25                  30

Glu Met Val Glu Leu Leu Asp Lys Gly Asp Ser Val Val Asn His Thr  
           35                                  40                                  45  
 Ser Leu Ser Asn Tyr Ala Phe Leu Tyr Gly Val Phe Pro Val Ala Pro  
           50                                  55                                  60  
 Gly Val Ala Ile Phe Ala Thr Gln Phe Asn Met Glu Val Glu Ile Ile  
           65                                  70                                  75                                  80  
 Thr Ser Gly Met Val Ile Ser Thr Phe Val Ser Ala Pro Ile Met Tyr  
                                   85                                  90                                  95  
 Val Xaa Ala Trp Leu Leu Thr Phe Pro Thr Met Asp Pro Lys Pro Leu  
                                   100                                  105                                  110  
 Ala Tyr Ala Ile Gln Asn Val Ser Phe Asp Ile Ser Ile Val Ser Leu  
           115                                  120                                  125  
 Ile Ser Leu Ile Trp Xaa Leu Ala Ile Leu Leu Leu Ser Lys Lys Tyr  
           130                                  135                                  140  
 Lys Gln Leu Xaa His Met Leu Thr Thr Asn Leu Leu Ile Ala Gln Ser  
           145                                  150                                  155                                  160  
 Ile Val Cys Ala Gly Met Met Ile Trp Asn Xaa Xaa Lys Glu Lys Asn  
                                   165                                  170                                  175  
 Phe

&lt;210&gt; 1722

&lt;211&gt; 227

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (171)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1722

Met Val Gly Lys Ile Lys Arg Leu Lys Lys Ser Ala Phe Val Val Leu  
           1                                  5                                  10                                  15  
 Ile Leu Leu Ile Thr Ala Lys Leu Leu Val Leu Pro Leu Leu Cys Arg  
                                   20                                  25                                  30  
 Glu Met Val Glu Leu Leu Asp Lys Gly Asp Ser Val Val Asn His Thr  
           35                                  40                                  45  
 Ser Leu Ser Asn Tyr Ala Phe Leu Tyr Gly Val Phe Pro Val Ala Pro  
           50                                  55                                  60  
 Gly Val Ala Ile Phe Ala Thr Gln Phe Asn Met Glu Val Glu Ile Ile  
           65                                  70                                  75                                  80  
 Thr Ser Gly Met Val Ile Ser Thr Phe Val Ser Ala Pro Ile Met Tyr  
                                   85                                  90                                  95

Val Ser Ala Trp Leu Leu Thr Phe Pro Thr Met Asp Pro Lys Pro Leu  
 100 105 110

Ala Tyr Ala Ile Gln Asn Val Ser Phe Asp Ile Ser Ile Val Ser Leu  
 115 120 125

Ile Ser Leu Ile Trp Ser Leu Ala Ile Leu Leu Leu Ser Lys Lys Tyr  
 130 135 140

Lys Gln Leu Pro His Met Leu Thr Thr Asn Leu Leu Ile Ala Gln Ser  
 145 150 155 160

Ile Val Cys Ala Gly Met Met Ile Trp Asn Xaa Val Lys Glu Lys Asn  
 165 170 175

Phe Val Gly Gln Ile Leu Val Phe Val Leu Leu Tyr Ser Ser Leu Tyr  
 180 185 190

Ser Thr Tyr Leu Trp Thr Gly Leu Leu Ala Ile Ser Leu Phe Leu Leu  
 195 200 205

Lys Lys Arg Glu Arg Val Gln Ile Pro Val Gly Ile Ile Ile Ile Ser  
 210 215 220

Gly Trp Gly  
 225

&lt;210&gt; 1723

&lt;211&gt; 227

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1723

Met Val Gly Lys Ile Lys Arg Leu Lys Lys Ser Ala Phe Val Val Leu  
 1 5 10 15

Ile Leu Leu Ile Thr Ala Lys Leu Leu Val Leu Pro Leu Leu Cys Arg  
 20 25 30

Glu Met Val Glu Leu Leu Asp Lys Gly Asp Ser Val Val Asn His Thr  
 35 40 45

Ser Leu Ser Asn Tyr Ala Phe Leu Tyr Gly Val Phe Pro Val Ala Pro  
 50 55 60

Gly Val Ala Ile Phe Ala Thr Gln Phe Asn Met Glu Val Glu Ile Ile  
 65 70 75 80

Thr Ser Gly Met Val Ile Ser Thr Phe Val Ser Ala Pro Ile Met Tyr  
 85 90 95

Val Ser Ala Trp Leu Leu Thr Phe Pro Thr Met Asp Pro Lys Pro Leu  
 100 105 110

Ala Tyr Ala Ile Gln Asn Val Ser Phe Asp Ile Ser Ile Val Ser Leu  
 115 120 125

Ile Ser Leu Ile Trp Ser Leu Ala Ile Leu Leu Leu Ser Lys Lys Tyr  
 130 135 140  
 Lys Gln Leu Pro His Met Leu Thr Thr Asn Leu Leu Ile Ala Gln Ser  
 145 150 155 160  
 Ile Val Cys Ala Gly Met Met Ile Trp Asn Phe Val Lys Glu Lys Asn  
 165 170 175  
 Phe Val Gly Gln Ile Leu Val Phe Val Leu Leu Tyr Ser Ser Leu Tyr  
 180 185 190  
 Ser Thr Tyr Leu Trp Thr Gly Leu Leu Ala Ile Ser Leu Phe Leu Leu  
 195 200 205  
 Lys Lys Arg Glu Arg Val Gln Ile Pro Val Gly Ile Ile Ile Ile Ser  
 210 215 220  
 Gly Trp Gly  
 225

<210> 1724  
 <211> 87  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (61)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (82)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1724  
 Met Gln Trp Arg Ala Leu Val Leu Gly Leu Val Leu Leu Arg Leu Gly  
 1 5 10 15  
 Leu His Gly Val Leu Trp Leu Val Phe Gly Leu Gly Pro Ser Met Gly  
 20 25 30  
 Phe Tyr Gln Arg Phe Pro Leu Ser Phe Gly Phe Gln Arg Leu Arg Ser  
 35 40 45  
 Pro Asp Gly Pro Ala Ser Pro Thr Phe Gly Ala Arg Xaa Pro Ala Trp  
 50 55 60  
 Gly Gly Ile Arg Ala Val Val Ala Cys Asn Arg Arg Gly Thr Gly Gln  
 65 70 75 80  
 Arg Xaa Thr Arg Ala Lys Leu  
 85

<210> 1725

<211> 146  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (115)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (123)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (140)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1725

Met	Gln	Trp	Arg	Ala	Leu	Val	Leu	Gly	Leu	Val	Leu	Leu	Arg	Leu	Gly
1				5				10					15		
Leu	His	Gly	Val	Leu	Trp	Leu	Val	Phe	Gly	Leu	Gly	Pro	Ser	Met	Gly
		20						25				30			
Phe	Tyr	Gln	Arg	Phe	Pro	Leu	Ser	Phe	Gly	Phe	Gln	Arg	Leu	Arg	Ser
		35					40					45			
Pro	Asp	Gly	Pro	Ala	Ser	Pro	Thr	Ser	Gly	Pro	Val	Gly	Arg	Pro	Gly
	50					55					60				
Gly	Val	Ser	Gly	Pro	Ser	Trp	Leu	Gln	Pro	Pro	Gly	Thr	Gly	Ala	Ala
65					70					75				80	
Gln	Ser	Pro	Arg	Lys	Ala	Pro	Arg	Arg	Pro	Gly	Pro	Gly	Met	Cys	Gly
				85					90				95		
Pro	Ala	Asn	Trp	Gly	Tyr	Val	Leu	Gly	Arg	Pro	Gly	Arg	Gly	Pro	Asp
			100					105					110		
Glu	Tyr	Xaa	Glu	Ala	Ala	Thr	Ala	Ala	Pro	Xaa	Leu	Arg	Asn	Leu	Arg
		115					120					125			
Ala	Arg	Cys	Pro	Glu	Leu	Ala	Arg	Gly	Met	Val	Xaa	Phe	Trp	Ala	Thr
	130					135					140				
Thr	Leu														
145															

<210> 1726  
 <211> 405  
 <212> PRT  
 <213> Homo sapiens

<400> 1726

Met	Gln	Trp	Arg	Ala	Leu	Val	Leu	Gly	Leu	Val	Leu	Leu	Arg	Leu	Gly
1				5				10					15		



Leu His Gly Val Leu Trp Leu Val Phe Gly Leu Gly Pro Ser Met Gly  
 20 25 30  
 Phe Tyr Gln Arg Phe Pro Leu Ser Phe Gly Phe Gln Arg Leu Arg Ser  
 35 40 45  
 Pro Asp Gly Pro Ala Ser Pro Thr Ser Gly Pro Val Gly Arg Pro Gly  
 50 55 60  
 Gly Val Ser Gly Pro Ser Trp Leu Gln Pro Pro Gly Thr Gly Ala Ala  
 65 70 75 80  
 Gln Ser Pro Arg Lys Ala Pro Arg Arg Pro Gly Pro Gly Met Cys Gly  
 85 90 95  
 Pro Ala Asn Trp Gly Tyr Val Leu Gly Gly Arg Gly Arg Gly Pro Asp  
 100 105 110  
 Glu Tyr Glu Lys Arg Tyr Ser Gly Ala Phe Pro Pro Gln Leu Arg Ala  
 115 120 125  
 Gln Met Arg Asp Leu Ala Arg Gly Met Phe Val Phe Gly Tyr Asp Asn  
 130 135 140  
 Tyr Met Ala His Ala Phe Pro Gln Asp Glu Leu Asn Pro Ile His Cys  
 145 150 155 160  
 Arg Gly Arg Gly Pro Asp Arg Gly Asp Pro Ser Asn Leu Asn Ile Asn  
 165 170 175  
 Asp Val Leu Gly Asn Tyr Ser Leu Thr Leu Val Asp Ala Leu Asp Thr  
 180 185 190  
 Leu Ala Ile Met Gly Asn Ser Ser Glu Phe Gln Lys Ala Val Lys Leu  
 195 200 205  
 Val Ile Asn Thr Val Ser Phe Asp Lys Asp Ser Thr Val Gln Val Phe  
 210 215 220  
 Glu Ala Thr Ile Arg Val Leu Gly Ser Leu Leu Ser Ala His Arg Ile  
 225 230 235 240  
 Ile Thr Asp Ser Lys Gln Pro Phe Gly Asp Met Thr Ile Lys Asp Tyr  
 245 250 255  
 Asp Asn Glu Leu Leu Tyr Met Ala His Asp Leu Ala Val Arg Leu Leu  
 260 265 270  
 Pro Ala Phe Glu Asn Thr Lys Thr Gly Ile Pro Tyr Pro Arg Val Asn  
 275 280 285  
 Leu Lys Thr Gly Val Pro Pro Asp Thr Asn Asn Glu Thr Cys Thr Ala  
 290 295 300  
 Gly Ala Gly Ser Leu Leu Val Glu Phe Gly Ile Leu Ser Arg Leu Leu  
 305 310 315 320  
 Gly Asp Ser Thr Phe Glu Trp Val Ala Arg Ala Val Lys Ala Leu  
 325 330 335

Trp Asn Leu Arg Ser Asn Asp Thr Gly Leu Leu Gly Val Ala Pro Phe  
                   340                  345                  350

Leu Ala Ile Gly Thr Ala His Cys Leu Val Pro Phe Ser Phe His Leu  
                   355                  360                  365

Leu Trp Ala Leu Pro Pro Phe Tyr Ser Ser Thr Gln Leu Thr Thr Gln  
                   370                  375                  380

Gln Glu Leu Cys Gln Leu Tyr Leu Ile Ser Leu Cys Asp Pro Leu Gln  
                   385                  390                  395                  400

Arg Gly Cys Met Val  
                   405

<210> 1727

<211> 120

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (116)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (120)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1727

Met Ile Leu Trp Leu Asp Trp Ala Leu Phe Leu Leu Val Phe Pro Gly  
   1                  5                  10                  15

Gln Phe Phe Cys Trp Phe Cys Leu Gly Ser Leu Met Arg Leu Gln Val  
                   20                  25                  30

Ala Ala Gly Ser Ala Ser Val Trp Gly Ser Ala Gly Met Thr Trp Pro  
                   35                  40                  45

Leu Ser Ala Cys Gly Pro Leu Ser Ser Met Met Val Ser Gly Phe Gln  
   50                  55                  60

Ala Ser Lys Pro Gln Cys Thr Ser Ile Tyr Pro Ala Phe Ala Cys Ile  
   65                  70                  75                  80

Ala Leu Ala His Val Ser Leu Ala Lys Thr Asp His Val Ala Lys Leu  
                   85                  90                  95

Arg Val Ser Val Gly Arg Val Tyr Thr Ser Ala Trp Ile Leu Lys Gly  
                   100                  105                  110

Met Ile His Xaa Gly Pro Leu Xaa  
                   115                  120

<210> 1728  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (11)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1728  
 Lys Tyr Ser Tyr Cys Ser His Leu His Phe Xaa Met Asn Glu Ser Ala  
     1                    5                    10                    15  
 Leu Phe Cys Ser Asn Phe His Trp Lys Pro Val Gly Ser Glu Arg Leu  
                     20                    25                    30  
 Trp Pro Pro Leu Ile Ile Tyr Asp Leu Lys Pro Ala Cys Asn Arg Glu  
                     35                    40                    45  
 Pro Leu Gln Ser Leu  
                     50

<210> 1729  
 <211> 120  
 <212> PRT  
 <213> Homo sapiens

<400> 1729  
 Met Ile Leu Trp Leu Asp Trp Ala Leu Phe Leu Leu Val Phe Pro Gly  
     1                    5                    10                    15  
 Gln Phe Phe Cys Trp Phe Cys Leu Gly Ser Leu Met Arg Leu Gln Val  
                     20                    25                    30  
 Ala Ala Gly Ser Ala Ser Val Trp Gly Ser Ala Gly Met Thr Trp Pro  
                     35                    40                    45  
 Leu Ser Ala Cys Gly Pro Leu Ser Ser Met Met Val Ser Gly Phe Gln  
                     50                    55                    60  
 Ala Ser Lys Pro Gln Cys Thr Ser Ile Tyr Pro Ala Phe Ala Cys Ile  
                     65                    70                    75                    80  
 Ala Leu Ala His Val Ser Leu Ala Lys Thr Asp His Val Ala Lys Leu  
                     85                    90                    95  
 Arg Val Ser Val Gly Arg Val Tyr Thr Ser Ala Trp Ile Leu Lys Gly  
                     100                    105                    110  
 Met Ile His Trp Gly Pro Leu Leu  
                     115                    120

<210> 1730  
 <211> 485  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1730

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Met Leu Pro Thr Phe Leu Leu Met Asn Leu Leu Ser Leu Ala Gly Asp
 1              5              10              15

Val Ala Leu Gln Gln Leu Val His Leu Glu Gln Ala Val Ser Gly Glu
      20              25              30

Leu Cys Arg Arg Arg Val Leu Arg Glu Glu Gln Glu His Lys Thr Lys
      35              40              45

Asp Pro Lys Glu Lys Asn Thr Ser Ser Glu Thr Thr Met Glu Glu Glu
      50              55              60

Leu Gly Leu Val Gly Ala Thr Ala Asp Asp Thr Glu Ala Glu Leu Ile
 65              70              75              80

Arg Gly Ile Cys Glu Met Glu Leu Leu Asp Gly Lys Gln Thr Leu Ala
      85              90              95

Ala Phe Val Pro Leu Leu Leu Lys Val Cys Asn Asn Pro Gly Leu Tyr
      100              105              110

Ser Asn Pro Asp Leu Ser Ala Ala Ala Ser Leu Ala Leu Gly Lys Phe
      115              120              125

Cys Met Ile Ser Ala Thr Phe Cys Asp Ser Gln Leu Arg Leu Leu Phe
 130              135              140

Thr Met Leu Glu Lys Ser Pro Leu Pro Ile Val Arg Ser Asn Leu Met
 145              150              155              160

Val Ala Thr Gly Asp Leu Ala Ile Arg Phe Pro Asn Leu Val Asp Pro
      165              170              175

Trp Thr Pro His Leu Tyr Ala Arg Leu Arg Asp Pro Ala Gln Gln Val
      180              185              190

Arg Lys Thr Ala Gly Leu Val Met Thr His Leu Ile Leu Lys Asp Met
      195              200              205

Val Lys Val Lys Gly Gln Val Ser Glu Met Ala Val Leu Leu Ile Asp
 210              215              220

Pro Glu Pro Gln Ile Ala Ala Leu Ala Lys Asn Phe Phe Asn Glu Leu
 225              230              235              240

Ser His Lys Gly Asn Ala Ile Tyr Asn Leu Leu Pro Asp Ile Ile Ser
      245              250              255

Arg Leu Ser Asp Pro Glu Leu Gly Val Glu Glu Glu Pro Phe His Thr
      260              265              270

Ile Met Lys Gln Leu Leu Ser Tyr Ile Thr Lys Asp Lys Gln Thr Glu
      275              280              285

Ser Leu Val Glu Lys Leu Cys Gln Arg Phe Arg Thr Ser Arg Thr Glu
 290              295              300

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Arg Gln Gln Arg Asp Leu Ala Tyr Cys Val Ser Gln Leu Pro Leu Thr  
 305 310 315 320  
 Glu Arg Gly Leu Arg Lys Met Leu Asp Asn Phe Asp Cys Phe Gly Asp  
 325 330 335  
 Lys Leu Ser Asp Glu Ser Ile Phe Ser Ala Phe Leu Ser Val Val Gly  
 340 345 350  
 Lys Leu Arg Arg Gly Ala Lys Pro Glu Gly Lys Ala Ile Ile Asp Glu  
 355 360 365  
 Phe Glu Gln Lys Leu Arg Ala Cys His Thr Arg Gly Leu Asp Gly Ile  
 370 375 380  
 Lys Glu Leu Glu Ile Gly Gln Ala Gly Ser Gln Arg Ala Pro Ser Ala  
 385 390 395 400  
 Lys Lys Pro Ser Thr Gly Ser Arg Tyr Gln Pro Leu Ala Ser Thr Ala  
 405 410 415  
 Ser Asp Asn Asp Phe Val Thr Pro Glu Pro Arg Arg Thr Thr Arg Arg  
 420 425 430  
 His Pro Asn Thr Gln Gln Arg Ala Ser Lys Lys Lys Pro Lys Val Val  
 435 440 445  
 Phe Ser Ser Asp Glu Ser Ser Glu Glu Asp Leu Ser Ala Glu Met Thr  
 450 455 460  
 Glu Asp Glu Thr Pro Lys Lys Thr Thr Pro Ile Leu Arg Ala Ser Ala  
 465 470 475 480  
 Arg Arg His Arg Ser  
 485

<210> 1731  
 <211> 485  
 <212> PRT  
 <213> Homo sapiens

<400> 1731

Met Leu Pro Thr Phe Leu Leu Met Asn Leu Leu Ser Leu Ala Gly Asp  
 1 5 10 15  
 Val Ala Leu Gln Gln Leu Val His Leu Glu Gln Ala Val Ser Gly Glu  
 20 25 30  
 Leu Cys Arg Arg Arg Val Leu Arg Glu Glu Gln Glu His Lys Thr Lys  
 35 40 45  
 Asp Pro Lys Glu Lys Asn Thr Ser Ser Glu Thr Thr Met Glu Glu Glu  
 50 55 60  
 Leu Gly Leu Val Gly Ala Thr Ala Asp Asp Thr Glu Ala Glu Leu Ile  
 65 70 75 80  
 Arg Gly Ile Cys Glu Met Glu Leu Leu Asp Gly Lys Gln Thr Leu Ala

85								90				95			
Ala	Phe	Val	Pro	Leu	Leu	Leu	Lys	Val	Cys	Asn	Asn	Pro	Gly	Leu	Tyr
			100							105			110		
Ser	Asn	Pro	Asp	Leu	Ser	Ala	Ala	Ala	Ser	Leu	Ala	Leu	Gly	Lys	Phe
		115					120					125			
Cys	Met	Ile	Ser	Ala	Thr	Phe	Cys	Asp	Ser	Gln	Leu	Arg	Leu	Leu	Phe
	130					135					140				
Thr	Met	Leu	Glu	Lys	Ser	Pro	Leu	Pro	Ile	Val	Arg	Ser	Asn	Leu	Met
145					150					155				160	
Val	Ala	Thr	Gly	Asp	Leu	Ala	Ile	Arg	Phe	Pro	Asn	Leu	Val	Asp	Pro
				165					170					175	
Trp	Thr	Pro	His	Leu	Tyr	Ala	Arg	Leu	Arg	Asp	Pro	Ala	Gln	Gln	Val
			180						185				190		
Arg	Lys	Thr	Ala	Gly	Leu	Val	Met	Thr	His	Leu	Ile	Leu	Lys	Asp	Met
		195					200					205			
Val	Lys	Val	Lys	Gly	Gln	Val	Ser	Glu	Met	Ala	Val	Leu	Leu	Ile	Asp
	210					215					220				
Pro	Glu	Pro	Gln	Ile	Ala	Ala	Leu	Ala	Lys	Asn	Phe	Phe	Asn	Glu	Leu
225					230					235				240	
Ser	His	Lys	Gly	Asn	Ala	Ile	Tyr	Asn	Leu	Leu	Pro	Asp	Ile	Ile	Ser
				245					250					255	
Arg	Leu	Ser	Asp	Pro	Glu	Leu	Gly	Val	Glu	Glu	Glu	Pro	Phe	His	Thr
			260						265				270		
Ile	Met	Lys	Gln	Leu	Leu	Ser	Tyr	Ile	Thr	Lys	Asp	Lys	Gln	Thr	Glu
		275					280					285			
Ser	Leu	Val	Glu	Lys	Leu	Cys	Gln	Arg	Phe	Arg	Thr	Ser	Arg	Thr	Glu
	290					295					300				
Arg	Gln	Gln	Arg	Asp	Leu	Ala	Tyr	Cys	Val	Ser	Gln	Leu	Pro	Leu	Thr
305					310					315				320	
Glu	Arg	Gly	Leu	Arg	Lys	Met	Leu	Asp	Asn	Phe	Asp	Cys	Phe	Gly	Asp
				325					330				335		
Lys	Leu	Ser	Asp	Glu	Ser	Ile	Phe	Ser	Ala	Phe	Leu	Ser	Val	Val	Gly
			340						345				350		
Lys	Leu	Arg	Arg	Gly	Ala	Lys	Pro	Glu	Gly	Lys	Ala	Ile	Ile	Asp	Glu
		355					360					365			
Phe	Glu	Gln	Lys	Leu	Arg	Ala	Cys	His	Thr	Arg	Gly	Leu	Asp	Gly	Ile
	370					375					380				
Lys	Glu	Leu	Glu	Ile	Gly	Gln	Ala	Gly	Ser	Gln	Arg	Ala	Pro	Ser	Ala
385					390					395				400	
Lys	Lys	Pro	Ser	Thr	Gly	Ser	Arg	Tyr	Gln	Pro	Leu	Ala	Ser	Thr	Ala

				405				410				415			
Ser	Asp	Asn	Asp	Phe	Val	Thr	Pro	Glu	Pro	Arg	Arg	Thr	Thr	Arg	Arg
420								425				430			
His	Pro	Asn	Thr	Gln	Gln	Arg	Ala	Ser	Lys	Lys	Lys	Pro	Lys	Val	Val
435								440				445			
Phe	Ser	Ser	Asp	Glu	Ser	Ser	Glu	Glu	Asp	Leu	Ser	Ala	Glu	Met	Thr
450								455				460			
Glu	Asp	Glu	Thr	Pro	Lys	Lys	Thr	Thr	Pro	Ile	Leu	Arg	Ala	Ser	Ala
465												475			
Arg	Arg	His	Arg	Ser											
485															

```
<210> 1732
<211> 485
<212> PRT
<213> Homo sapiens
```

<400> 1732

Met	Leu	Pro	Thr	Phe	Leu	Leu	Met	Asn	Leu	Leu	Ser	Leu	Ala	Gly	Asp
1				5					10					15	
Val	Ala	Leu	Gln	Gln	Leu	Val	His	Leu	Glu	Gln	Ala	Val	Ser	Gly	Glu
			20					25					30		
Leu	Cys	Arg	Arg	Arg	Val	Leu	Arg	Glu	Glu	Gln	Glu	His	Lys	Thr	Lys
		35					40					45			
Asp	Pro	Lys	Glu	Lys	Asn	Thr	Ser	Ser	Glu	Thr	Thr	Met	Glu	Glu	Glu
	50					55					60				
Leu	Gly	Leu	Val	Gly	Ala	Thr	Ala	Asp	Asp	Thr	Glu	Ala	Glu	Leu	Ile
65					70					75					80
Arg	Gly	Ile	Cys	Glu	Met	Glu	Leu	Leu	Asp	Gly	Lys	Gln	Thr	Leu	Ala
			85						90					95	
Ala	Phe	Val	Pro	Leu	Leu	Leu	Lys	Val	Cys	Asn	Asn	Pro	Gly	Leu	Tyr
			100					105					110		
Ser	Asn	Pro	Asp	Leu	Ser	Ala	Ala	Ala	Ser	Leu	Ala	Leu	Gly	Lys	Phe
		115					120					125			
Cys	Met	Ile	Ser	Ala	Thr	Phe	Cys	Asp	Ser	Gln	Leu	Arg	Leu	Leu	Phe
	130					135					140				
Thr	Met	Leu	Glu	Lys	Ser	Pro	Leu	Pro	Ile	Val	Arg	Ser	Asn	Leu	Met
145					150					155					160
Val	Ala	Thr	Gly	Asp	Leu	Ala	Ile	Arg	Phe	Pro	Asn	Leu	Val	Asp	Pro
			165						170					175	
Trp	Thr	Pro	His	Leu	Tyr	Ala	Arg	Leu	Arg	Asp	Pro	Ala	Gln	Gln	Val
			180					185					190		

Arg Lys Thr Ala Gly Leu Val Met Thr His Leu Ile Leu Lys Asp Met  
 195 200 205  
 Val Lys Val Lys Gly Gln Val Ser Glu Met Ala Val Leu Leu Ile Asp  
 210 215 220  
 Pro Glu Pro Gln Ile Ala Ala Leu Ala Lys Asn Phe Phe Asn Glu Leu  
 225 230 235 240  
 Ser His Lys Gly Asn Ala Ile Tyr Asn Leu Leu Pro Asp Ile Ile Ser  
 245 250 255  
 Arg Leu Ser Asp Pro Glu Leu Gly Val Glu Glu Glu Pro Phe His Thr  
 260 265 270  
 Ile Met Lys Gln Leu Leu Ser Tyr Ile Thr Lys Asp Lys Gln Thr Glu  
 275 280 285  
 Ser Leu Val Glu Lys Leu Cys Gln Arg Phe Arg Thr Ser Arg Thr Glu  
 290 295 300  
 Arg Gln Gln Arg Asp Leu Ala Tyr Cys Val Ser Gln Leu Pro Leu Thr  
 305 310 315 320  
 Glu Arg Gly Leu Arg Lys Met Leu Asp Asn Phe Asp Cys Phe Gly Asp  
 325 330 335  
 Lys Leu Ser Asp Glu Ser Ile Phe Ser Ala Phe Leu Ser Val Val Gly  
 340 345 350  
 Lys Leu Arg Arg Gly Ala Lys Pro Glu Gly Lys Ala Ile Ile Asp Glu  
 355 360 365  
 Phe Glu Gln Lys Leu Arg Ala Cys His Thr Arg Gly Leu Asp Gly Ile  
 370 375 380  
 Lys Glu Leu Glu Ile Gly Gln Ala Gly Ser Gln Arg Ala Pro Ser Ala  
 385 390 395 400  
 Lys Lys Pro Ser Thr Gly Ser Arg Tyr Gln Pro Leu Ala Ser Thr Ala  
 405 410 415  
 Ser Asp Asn Asp Phe Val Thr Pro Glu Pro Arg Arg Thr Thr Arg Arg  
 420 425 430  
 His Pro Asn Thr Gln Gln Arg Ala Ser Lys Lys Lys Pro Lys Val Val  
 435 440 445  
 Phe Ser Ser Asp Glu Ser Ser Glu Glu Asp Leu Ser Ala Glu Met Thr  
 450 455 460  
 Glu Asp Glu Thr Pro Lys Lys Thr Thr Pro Ile Leu Arg Ala Ser Ala  
 465 470 475 480  
 Arg Arg His Arg Ser  
 485



<210> 1733  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<400> 1733  
 Met Val Val Thr Thr Glu Pro Leu Thr Gln Ala Val Val Asp Lys Thr  
     1                    5                    10                    15  
 Leu Leu Leu Val Val Leu Leu Leu Gly Val Thr Leu Phe Ile Thr Val  
                     20                    25                    30  
 Leu Val Leu Phe Ala Leu Gln Ala Tyr Glu Ser Tyr Lys Lys Lys Asp  
             35                    40                    45  
 Tyr Thr Gln Val Asp Tyr Leu Ile Asn Gly Met Tyr Ala Asp Ser Glu  
     50                    55                    60  
 Met  
 65

<210> 1734  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<400> 1734  
 Met Val Val Thr Thr Glu Pro Leu Thr Gln Ala Val Val Asp Lys Thr  
     1                    5                    10                    15  
 Leu Leu Leu Val Val Leu Leu Leu Gly Val Thr Leu Phe Ile Thr Val  
                     20                    25                    30  
 Leu Val Leu Phe Ala Leu Gln Ala Tyr Glu Ser Tyr Lys Lys Lys Asp  
     35                    40                    45  
 Tyr Thr Gln Val Asp Tyr Leu Ile Asn Gly Met Tyr Ala Asp Ser Glu  
     50                    55                    60  
 Met  
 65

<210> 1735  
 <211> 342  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (150)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
 <220>  
 <221> SITE  
 <222> (271)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1735

Met Trp Thr Ala Leu Val Leu Ile Trp Ile Phe Ser Leu Ser Leu Ser  
 1 5 10 15  
 Glu Ser His Ala Ala Ser Asn Asp Pro Arg Asn Phe Val Pro Asn Lys  
 20 25 30  
 Met Trp Lys Gly Leu Val Lys Arg Asn Ala Ser Val Glu Thr Val Asp  
 35 40 45  
 Asn Lys Thr Ser Glu Asp Val Thr Met Ala Ala Ala Ser Pro Val Thr  
 50 55 60  
 Leu Thr Lys Gly Thr Ser Ala Ala His Leu Asn Ser Met Glu Val Thr  
 65 70 75 80  
 Thr Glu Asp Thr Ser Arg Thr Asp Val Ser Glu Pro Ala Thr Ser Gly  
 85 90 95  
 Gly Ala Ala Asp Gly Val Thr Ser Ile Ala Pro Thr Ala Val Ala Ser  
 100 105 110  
 Ser Thr Thr Ala Ala Ser Ile Thr Thr Ala Ala Ser Ser Met Thr Val  
 115 120 125  
 Ala Ser Ser Ala Pro Thr Thr Ala Ala Ser Ser Thr Thr Val Ala Ser  
 130 135 140  
 Ile Ala Pro Thr Thr Xaa Ala Ser Ser Met Thr Ala Ala Ser Ser Thr  
 145 150 155 160  
 Pro Met Thr Leu Ala Leu Pro Ala Pro Thr Ser Thr Ser Thr Gly Arg  
 165 170 175  
 Thr Pro Ser Thr Thr Ala Thr Gly His Pro Ser Leu Ser Thr Ala Leu  
 180 185 190  
 Ala Gln Val Pro Lys Ser Ser Ala Leu Pro Arg Thr Ala Thr Leu Ala  
 195 200 205  
 Thr Leu Ala Thr Arg Ala Gln Thr Val Ala Thr Thr Ala Asn Thr Ser  
 210 215 220  
 Ser Pro Met Ser Thr Arg Pro Ser Pro Ser Lys His Met Pro Ser Asp  
 225 230 235 240  
 Thr Ala Ala Ser Pro Val Pro Pro Met Arg Pro Gln Ala Gln Gly Pro  
 245 250 255  
 Ile Ser Gln Val Ser Val Asp Gln Pro Val Val Asn Thr Thr Xaa Lys  
 260 265 270  
 Ser Thr Pro Met Pro Ser Asn Thr Thr Thr Glu Pro Leu Thr Gln Ala  
 275 280 285  
 Val Val Asp Lys Thr Leu Leu Leu Val Val Leu Leu Leu Gly Val Thr  
 290 295 300  
 Leu Phe Ile Thr Val Leu Val Leu Phe Ala Leu Gln Ala Tyr Glu Ser

[illegible]

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<210> 1736
<211> 96
<212> PRT
<213> Homo sapiens

<220>
<221> SITE
<222> (75)
<223> Xaa equals any of the naturally occurring L-amino acids
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<400> 1736
Met Thr Leu Pro Thr Ser Gln Cys Leu Ile Cys Leu Leu Gln Ala Leu
  1                      5                      10                      15

Cys Gly Ile Gly His Gly Ala Leu Ala Trp Gly Ser Asn Gln Val Leu
          20                      25                      30

Phe Pro Gly Gly Gln Gln Glu Asp Gly Gly Cys Gln Arg Ile Pro Asp
          35                      40                      45

Pro Ser Phe Leu Ser Thr Pro Cys Gly Lys Gln Gly Gly His Ala Glu
  50                      55                      60

Gln Glu Leu Gln Gln Cys Trp Gly Ala Phe Xaa Gln Leu Pro Gly Cys
  65                      70                      75                      80

Val Leu His Phe His Pro Gly Val Leu His Lys Ala His Ser Glu Trp
          85                      90                      95

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<210> 1737
<211> 79
<212> PRT
<213> Homo sapiens
```

<400> 1737  
Gly Leu Gly Pro Gly Ile Pro Met Cys Phe Gln Gln Trp Thr Thr Cys  
1 5 10 15  
Ser Glu Val Leu Val Cys Ala Ser Pro Val Ser Val Val Asp Lys Thr  
20 25 30  
Asp Gly Arg Phe Arg Gly Ser Thr Pro His Thr Cys Lys Leu Asp Arg  
35 40 45  
Ala Gln Lys Leu Val Lys Asp Ile Trp Arg Cys Cys Ala Gly Gln Phe

50 55 60

Ala Pro Leu Ser Leu Arg Ser Met Val Phe His Asn Ala Pro Ile  
65 70 75

<210> 1738  
<211> 96  
<212> PRT  
<213> Homo sapiens

<400> 1738  
Met Thr Leu Pro Thr Ser Gln Cys Leu Ile Cys Leu Leu Gln Ala Leu  
1 5 10 15  
Cys Gly Ile Gly His Gly Ala Leu Ala Trp Gly Ser Asn Gln Val Leu  
20 25 30  
Phe Pro Gly Gly Gln Gln Glu Asp Gly Gly Cys Gln Arg Ile Pro Asp  
35 40 45  
Pro Ser Phe Leu Ser Thr Pro Cys Gly Lys Gln Gly Gly His Ala Glu  
50 55 60  
Gln Glu Leu Gln Gln Cys Trp Gly Ala Phe Cys Gln Leu Pro Gly Cys  
65 70 75 80  
Val Leu His Phe His Pro Gly Val Leu His Lys Ala His Ser Glu Trp  
85 90 95

<210> 1739  
<211> 162  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (134)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (142)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (154)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (161)  
<223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1739

Met Ala Leu Pro Arg Cys Thr Trp Pro Asn Tyr Val Trp Arg Ala Val  
 1 5 10 15

Met Ala Cys Leu Val His Arg Gly Leu Gly Ala Pro Leu Thr Leu Cys  
 20 25 30

Met Leu Gly Cys Leu Leu Gln Ala Gly His Val Leu Ser Gln Lys Leu  
 35 40 45

Asp Asp Val Asp Pro Leu Val Ala Thr Asn Phe Gly Lys Ile Arg Gly  
 50 55 60

Ile Lys Lys Glu Leu Asn Asn Glu Ile Leu Gly Pro Val Ile Gln Phe  
 65 70 75 80

Leu Gly Val Pro Tyr Ala Ala Pro Pro Thr Gly Glu Arg Arg Phe Gln  
 85 90 95

Pro Pro Glu Pro Pro Ser Pro Trp Ser Asp Ile Arg Asn Ala Thr Gln  
 100 105 110

Phe Ala Pro Val Cys Pro Gln Asn Ile Ile Asp Gly Arg Leu Pro Glu  
 115 120 125

Val Met Leu Pro Val Xaa Phe Thr Asn Asn Leu Asp Val Xaa Ser Ser  
 130 135 140

Tyr Val Gln Asp Gln Ser Glu Arg Leu Xaa Ile Phe Lys Tyr Ile Cys  
 145 150 155 160

Xaa Asp

&lt;210&gt; 1740

&lt;211&gt; 228

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1740

Met Ala Leu Pro Arg Cys Thr Trp Pro Asn Tyr Val Trp Arg Ala Val  
 1 5 10 15

Met Ala Cys Leu Val His Arg Gly Leu Gly Ala Pro Leu Thr Leu Cys  
 20 25 30

Met Leu Gly Cys Leu Leu Gln Ala Gly His Val Leu Ser Gln Lys Leu  
 35 40 45

Asp Asp Val Asp Pro Leu Val Ala Thr Asn Phe Gly Lys Ile Arg Gly  
 50 55 60

Ile Lys Lys Glu Leu Asn Asn Glu Ile Leu Gly Pro Val Ile Gln Phe  
 65 70 75 80

Leu Gly Val Pro Tyr Ala Ala Pro Pro Thr Gly Glu Arg Arg Phe Gln  
 85 90 95

Pro Pro Glu Pro Pro Ser Pro Trp Ser Asp Ile Arg Asn Ala Thr Gln  
                   100                  105                  110  
 Phe Ala Pro Val Cys Pro Gln Asn Ile Ile Asp Gly Arg Leu Pro Glu  
                   115                  120                  125  
 Val Met Leu Pro Val Trp Phe Thr Asn Asn Leu Asp Val Val Ser Ser  
                   130                  135                  140  
 Tyr Val Gln Asp Gln Ser Glu Asp Cys Leu Tyr Leu Asn Ile Tyr Val  
                   145                  150                  155                  160  
 Pro Thr Glu Asp Asp Ile Arg Asp Ser Gly Gly Pro Lys Pro Val Met  
                   165                  170                  175  
 Val Tyr Ile His Gly Gly Ser Tyr Met Glu Gly Thr Gly Asn Leu Tyr  
                   180                  185                  190  
 Asp Gly Ser Val Leu Ala Ser Tyr Gly Asn Val Ile Val Ile Thr Val  
                   195                  200                  205  
 Asn Tyr Arg Leu Gly Val Leu Gly Lys Lys Ser Leu Ser Phe Val Phe  
                   210                  215                  220  
 Thr Met Asn Pro  
 225

<210> 1741  
 <211> 94  
 <212> PRT  
 <213> Homo sapiens

<400> 1741  
 Met Leu Pro Thr Leu Thr Ala Pro Thr Leu Ala Leu Leu Leu Leu Pro  
   1                  5                  10                  15  
 Lys Ile Ser Cys Leu Leu Thr Ser Thr His Pro Arg Thr Gln Gly Ser  
                   20                  25                  30  
 Arg Ala His Phe Pro Arg Ala Trp Arg Leu Asp Pro Gly Glu Phe Leu  
                   35                  40                  45  
 His Pro Leu Gln Asp Pro His Ser Ser Pro Leu Trp Ser Leu Asp His  
                   50                  55                  60  
 Arg Trp Arg Trp Pro Glu Leu Thr Cys Trp Leu Trp Gly His Ser Ser  
                   65                  70                  75                  80  
 Cys Trp Pro Arg Met Arg Arg Gly Thr Arg Glu Tyr Lys Gly  
                   85                  90

<210> 1742  
 <211> 94  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 1742

Met Leu Pro Thr Leu Thr Ala Pro Thr Leu Ala Leu Leu Leu Leu Pro  
 1 5 10 15

Lys Ile Ser Cys Leu Leu Thr Ser Thr His Pro Arg Thr Gln Gly Ser  
 20 25 30

Arg Ala His Phe Pro Arg Ala Trp Arg Leu Asp Pro Gly Glu Phe Leu  
 35 40 45

His Pro Leu Gln Asp Pro His Ser Ser Pro Leu Trp Ser Leu Asp His  
 50 55 60

Arg Trp Arg Trp Pro Glu Leu Thr Cys Trp Leu Trp Gly His Ser Ser  
 65 70 75 80

Cys Trp Pro Arg Met Arg Arg Gly Thr Arg Glu Tyr Lys Gly  
 85 90

&lt;210&gt; 1743

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (8)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (9)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1743

Met Arg Thr Asp Tyr Pro Arg Xaa Xaa Arg Ser Cys Leu Cys Val Ser  
 1 5 10 15

Leu Ser Pro Pro Leu Val Ser Lys Gly Ser His Arg Ser Arg Trp Leu  
 20 25 30

Arg Thr Met Ala Val Pro Ala Gly Thr Gln Val Trp Arg Gln Asp Leu  
 35 40 45

Gln Pro Leu Gly Ala Val Leu Leu Gln  
 50 55

&lt;210&gt; 1744

&lt;211&gt; 123

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1744

Met Arg Thr Asp Tyr Pro Arg Ser Val Leu Ala Pro Ala Tyr Val Ser  
 1 5 10 15

Val Cys Leu Leu Leu Leu Cys Pro Arg Glu Val Ile Ala Pro Ala Gly  
                   20                                  25                                  30

Ser Glu Pro Trp Leu Cys Gln Pro Ala Pro Arg Cys Gly Asp Lys Ile  
                   35                                  40                                  45

Tyr Asn Pro Leu Glu Gln Cys Cys Tyr Asn Asp Ala Ile Val Ser Leu  
           50                                  55                                  60

Ser Glu Thr Arg Gln Cys Gly Pro Pro Cys Thr Phe Trp Pro Cys Phe  
   65                                  70                                  75                                  80

Glu Leu Cys Cys Leu Asp Ser Phe Gly Leu Thr Asn Asp Phe Val Val  
                                   85                                  90                                  95

Lys Leu Lys Val Gln Gly Val Asn Ser Gln Cys His Ser Ser Pro Ile  
                   100                                  105                                  110

Ser Ser Lys Cys Glu Ser Arg Arg Arg Phe Pro  
           115                                  120

<210> 1745  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<400> 1745  
 Met His Pro Leu Pro Cys Leu His Leu Trp Glu Phe Phe Leu Ser Glu  
   1                                  5                                  10                                  15

Trp Gly Gln Phe Leu Ala Gln Gly Ser Glu Leu Arg Gln Pro Gln Gly  
                   20                                  25                                  30

Arg Gly Pro Tyr Leu Leu Ser Ser Val Leu Gly Tyr Arg Glu Gln Pro  
           35                                  40                                  45

Gly Asp Ser Leu Val Pro Pro Pro Trp Arg Val Ser Leu Thr His Ser  
   50                                  55                                  60

Pro Ser Leu Arg Ala Ser Trp Pro Thr Ala Ser Leu Trp Glu Ser Gly  
   65                                  70                                  75                                  80

Arg Arg Ala Arg Trp Val Ala Gly Ala Arg Leu Leu Ser Pro Pro Pro  
                   85                                  90                                  95

Ala Asp Phe Leu Leu Leu Pro Leu Ile Pro Phe  
           100                                  105

<210> 1746  
 <211> 107  
 <212> PRT  
 <213> Homo sapiens

<400> 1746  
 Met His Pro Leu Pro Cys Leu His Leu Trp Glu Phe Phe Leu Ser Glu



1				5					10					15		
Trp	Gly	Gln	Phe	Leu	Ala	Gln	Gly	Ser	Glu	Leu	Arg	Gln	Pro	Gln	Gly	
			20					25					30			
Arg	Gly	Pro	Tyr	Leu	Leu	Ser	Ser	Val	Leu	Gly	Tyr	Arg	Glu	Gln	Pro	
		35					40					45				
Gly	Asp	Ser	Leu	Val	Pro	Pro	Pro	Trp	Arg	Val	Ser	Leu	Thr	His	Ser	
	50					55					60					
Pro	Ser	Leu	Arg	Ala	Ser	Trp	Pro	Thr	Ala	Ser	Leu	Trp	Glu	Ser	Gly	
	65				70					75					80	
Arg	Arg	Ala	Arg	Trp	Val	Ala	Gly	Ala	Arg	Leu	Leu	Ser	Pro	Pro	Pro	
				85					90					95		
Ala	Asp	Phe	Leu	Leu	Leu	Pro	Leu	Ile	Pro	Phe						
			100					105								

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<210> 1747
<211> 120
<212> PRT
<213> Homo sapiens
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<400> 1747
Met Ala Gly Tyr Gln Lys His His Gly Ser Phe Ala Ile Cys Cys Leu
  1          5          10          15
Phe Ser Ala Leu Ser Leu Thr Leu Ser Phe Gln Glu Gly Glu Asn Glu
          20          25          30
Cys Phe Pro Ala Phe Ser Val Leu Cys Ser Lys Glu Glu Ser Arg Cys
          35          40          45
Trp Leu Pro Asn Leu Pro Tyr Phe Leu Ile Ala Val Arg Gly Ile Asn
  50          55          60
Cys Met Phe Pro Glu Gly Lys Gly Trp Leu Thr Asp Leu Leu Glu Gly
  65          70          75          80
Ile Leu Ser Val Glu Ala Gly Gln Glu Asn Pro Gly Ile Ser Phe Ala
          85          90          95
Gly Phe Cys Ala Val Pro Leu Pro Ser Ser Cys Leu Lys Cys Glu Tyr
          100          105          110
Cys Phe Pro Ala Phe Gln Arg Trp
          115          120

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<210> 1748
<211> 62
<212> PRT
<213> Homo sapiens
```

<220>

&lt;221&gt; SITE

&lt;222&gt; (23)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1748

Asp Val Leu Gln Ile Thr Phe Trp Trp Pro Leu Val Thr Ala Val Ser  
 1 5 10 15

Leu Gln Gly Leu Asn Lys Xaa Leu Ser Pro Ile Pro Phe His Thr Cys  
 20 25 30

Val Val Tyr Tyr Trp Gln Ala Ser Val Leu Arg Val Ser Asn Gly Thr  
 35 40 45

Asp Gly Cys Gln Thr Leu Trp Ile Ser Ala Ser Pro Gly Trp  
 50 55 60

&lt;210&gt; 1749

&lt;211&gt; 120

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1749

Met Ala Gly Tyr Gln Lys His His Gly Ser Phe Ala Ile Cys Cys Leu  
 1 5 10 15

Phe Ser Ala Leu Ser Leu Thr Leu Ser Phe Gln Glu Gly Glu Asn Glu  
 20 25 30

Cys Phe Pro Ala Phe Ser Val Leu Cys Ser Lys Glu Glu Ser Arg Cys  
 35 40 45

Trp Leu Pro Asn Leu Pro Tyr Phe Leu Ile Ala Val Arg Gly Ile Asn  
 50 55 60

Cys Met Phe Pro Glu Gly Lys Gly Trp Leu Thr Asp Leu Leu Glu Gly  
 65 70 75 80

Ile Leu Ser Val Glu Ala Gly Gln Glu Asn Pro Gly Ile Ser Phe Ala  
 85 90 95

Gly Phe Cys Ala Val Pro Leu Pro Ser Ser Cys Leu Lys Cys Glu Tyr  
 100 105 110

Cys Phe Pro Ala Phe Gln Arg Trp  
 115 120

&lt;210&gt; 1750

&lt;211&gt; 105

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1750

Met Asp Asp Phe Leu Phe Ser Val Ser Ile Leu Ser Gly Ile Leu Cys  
 1 5 10 15

Ser Ile Leu Ala Val Leu Lys Phe Met Leu Gly Lys Val Leu Thr Ser  
                     20                    25                    30

Arg Ala Leu Ile Thr Asp Gly Phe Asn Ser Leu Val Gly Gly Val Met  
                     35                    40                    45

Gly Phe Ser Ile Leu Leu Ser Ala Glu Val Phe Lys His Asp Ser Ala  
                     50                    55                    60

Val Trp Tyr Leu Asp Gly Ser Ile Gly Val Leu Ile Gly Leu Thr Ile  
                     65                    70                    75                    80

Phe Ala Tyr Gly Val Lys Leu Leu Ile Asp Met Val Pro Arg Val Arg  
                     85                    90                    95

Gln Thr Arg His Tyr Glu Met Phe Glu  
                     100                    105

&lt;210&gt; 1751

&lt;211&gt; 186

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (138)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (166)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1751

Met Leu Asp Lys Ile Ile Ser Ile Phe Ile Ile Phe Leu Leu Val Ile  
                     1                    5                    10                    15

Gly Thr Leu Leu Leu Ala Leu Leu Leu Thr Ala Lys Val His Gln Glu  
                     20                    25                    30

Ser Val His Met Ile Glu Val Thr Ser Asn Leu Ile Asn Glu Thr Leu  
                     35                    40                    45

Ala Asn His Pro Glu Trp Ala Asn Trp Leu Pro Glu Ala Gln Val Val  
                     50                    55                    60

Gln Arg Ala Leu Asn Ser Ala Ala Asn Asn Val Tyr Gln Tyr Gly Arg  
                     65                    70                    75                    80

Glu Trp Ile Thr His Lys Leu His Lys Ile Leu Gly Asp Lys Val Asn  
                     85                    90                    95

Asn Thr Ala Val Ile Glu Lys Gln Val Leu Glu Leu Trp Asp Arg Leu  
                     100                    105                    110

Tyr His Ser Trp Phe Val Lys Asn Val Thr His Ser Gly Arg His Lys  
                     115                    120                    125

Gly Gln Lys Leu His Val Ser Arg Gln Xaa Ser Trp Leu Gly Asp Ile  
 130 135 140

Leu Asp Trp Gln Asp Ile Val Ser Phe Val His Glu Asn Ile Glu Thr  
 145 150 155 160

Phe Leu Ser Ile Leu Xaa Ser Leu Trp Ile Val Met Ser Leu Asn Val  
 165 170 175

Ser Leu Leu Leu Pro Leu Ala Leu His Ser  
 180 185

<210> 1752

<211> 224

<212> PRT

<213> Homo sapiens

<400> 1752

Val Leu Ser Leu Ile Ile Phe Leu Thr Thr Leu Phe Tyr Leu Leu Ser  
 1 5 10 15

Ser Ser Asp Glu Tyr Tyr Lys Pro Val Lys Trp Val Ile Ser Leu Thr  
 20 25 30

Pro Leu Ser Gln Pro Gly Pro Ser Ser Asn Ile Ile Gly Gln Ser Val  
 35 40 45

Glu Glu Ala Ile Arg Gly Val Phe Asp Ala Ser Leu Lys Met Ala Gly  
 50 55 60

Phe Tyr Gly Leu Tyr Thr Trp Leu Thr His Thr Met Phe Gly Ile Asn  
 65 70 75 80

Ile Val Phe Ile Pro Ser Ala Leu Ala Ala Ile Leu Gly Ala Val Pro  
 85 90 95

Phe Leu Gly Thr Tyr Trp Ala Ala Val Pro Ala Val Leu Asp Leu Trp  
 100 105 110

Leu Thr Gln Gly Leu Gly Cys Lys Ala Ile Leu Leu Leu Ile Phe His  
 115 120 125

Leu Leu Pro Thr Tyr Phe Val Asp Thr Ala Ile Tyr Ser Asp Ile Ser  
 130 135 140

Gly Gly Gly His Pro Tyr Leu Thr Gly Leu Ala Val Ala Gly Gly Ala  
 145 150 155 160

Tyr Tyr Leu Gly Leu Glu Gly Ala Ile Ile Gly Pro Ile Leu Leu Cys  
 165 170 175

Ile Leu Val Val Ala Ser Asn Ile Tyr Ser Ala Met Leu Val Ser Pro  
 180 185 190

Thr Asn Ser Val Pro Thr Pro Asn Gln Thr Pro Trp Pro Ala Gln Pro  
 195 200 205

Gln Arg Thr Phe Arg Asp Ile Ser Glu Asp Leu Lys Ser Ser Val Gly

210

215

220

<210> 1753  
 <211> 424  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (138)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (183)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1753

Met	Leu	Asp	Lys	Ile	Ile	Ser	Ile	Phe	Ile	Ile	Phe	Leu	Leu	Val	Ile
1				5					10					15	
Gly	Thr	Leu	Leu	Leu	Ala	Leu	Leu	Leu	Thr	Ala	Lys	Val	His	Gln	Glu
			20					25					30		
Ser	Val	His	Met	Ile	Glu	Val	Thr	Ser	Asn	Leu	Ile	Asn	Glu	Thr	Leu
		35					40					45			
Ala	Asn	His	Pro	Glu	Trp	Ala	Asn	Trp	Leu	Pro	Glu	Ala	Gln	Val	Val
	50					55					60				
Gln	Arg	Ala	Leu	Asn	Ser	Ala	Ala	Asn	Asn	Val	Tyr	Gln	Tyr	Gly	Arg
65					70					75					80
Glu	Trp	Ile	Thr	His	Lys	Leu	His	Lys	Ile	Leu	Gly	Asp	Lys	Val	Asn
				85					90					95	
Asn	Thr	Ala	Val	Ile	Glu	Lys	Gln	Val	Leu	Glu	Leu	Trp	Asp	Arg	Leu
			100					105					110		
Tyr	His	Ser	Trp	Phe	Val	Lys	Asn	Val	Thr	His	Ser	Gly	Arg	His	Lys
		115					120					125			
Gly	Gln	Lys	Leu	His	Val	Ser	Arg	Gln	Xaa	Ser	Trp	Leu	Gly	Asp	Ile
	130					135					140				
Leu	Asp	Trp	Gln	Asp	Ile	Val	Ser	Phe	Val	His	Glu	Asn	Ile	Glu	Thr
145					150					155				160	
Phe	Leu	Ser	Ile	Leu	Glu	Ser	Leu	Trp	Ile	Val	Met	Ser	Arg	Asn	Val
				165					170					175	
Ser	Leu	Leu	Phe	Thr	Thr	Xaa	Thr	Thr	Leu	Leu	Thr	Ile	Leu	Phe	Tyr
			180					185					190		
Ser	Gly	Thr	Ala	Leu	Leu	Asn	Phe	Val	Leu	Ser	Leu	Ile	Ile	Phe	Leu

195	200	205
Thr Thr Leu Phe Tyr Leu Leu Ser Ser Ser Asp Glu Tyr Tyr Lys Pro		
210	215	220
Val Lys Trp Val Ile Ser Leu Thr Pro Leu Ser Gln Pro Gly Pro Ser		
225	230	235 240
Ser Asn Ile Ile Gly Gln Ser Val Glu Glu Ala Ile Arg Gly Val Phe		
	245	250 255
Asp Ala Ser Leu Lys Met Ala Gly Phe Tyr Gly Leu Tyr Thr Trp Leu		
	260	265 270
Thr His Thr Met Phe Gly Ile Asn Ile Val Phe Ile Pro Ser Ala Leu		
	275	280 285
Ala Ala Ile Leu Gly Ala Val Pro Phe Leu Gly Thr Tyr Trp Ala Ala		
	290	295 300
Val Pro Ala Val Leu Asp Leu Trp Leu Thr Gln Gly Leu Gly Cys Lys		
305	310	315 320
Ala Ile Leu Leu Leu Ile Phe His Leu Leu Pro Thr Tyr Phe Val Asp		
	325	330 335
Thr Ala Ile Tyr Ser Asp Ile Ser Gly Gly Gly His Pro Tyr Leu Thr		
	340	345 350
Gly Leu Ala Val Ala Gly Gly Ala Tyr Tyr Leu Gly Leu Glu Gly Ala		
	355	360 365
Ile Ile Gly Pro Ile Leu Leu Cys Ile Leu Val Val Ala Ser Asn Ile		
	370	375 380
Tyr Ser Ala Met Leu Val Ser Pro Thr Asn Ser Val Pro Thr Pro Asn		
385	390	395 400
Gln Thr Pro Trp Pro Ala Gln Pro Gln Arg Thr Phe Arg Asp Ile Ser		
	405	410 415
Glu Asp Leu Lys Ser Ser Val Gly		
	420	

&lt;210&gt; 1754

&lt;211&gt; 385

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1754

Met Leu Asp Lys Ile Ile Ser Ile Phe Ile Ile Phe Leu Leu Val Ile
1 5 10 15
Gly Thr Leu Leu Leu Ala Leu Leu Leu Thr Ala Lys Val His Gln Glu
20 25 30
Ser Val His Met Ile Glu Val Thr Ser Asn Leu Ile Asn Glu Thr Leu
35 40 45

Ala Asn His Pro Glu Trp Ala Asn Trp Leu Pro Glu Ala Gln Val Val  
 50 55 60  
 Gln Arg Ala Leu Asn Ser Ala Ala Asn Asn Val Tyr Gln Tyr Gly Arg  
 65 70 75 80  
 Glu Trp Ile Thr His Lys Leu His Lys Ile Leu Gly Asp Lys Val Asn  
 85 90 95  
 Asn Thr Ala Val Ile Glu Lys Gln Val Leu Glu Leu Trp Asp Arg Leu  
 100 105 110  
 Tyr His Ser Trp Phe Val Lys Asn Val Thr His Ser Gly Arg His Lys  
 115 120 125  
 Gly Gln Lys Leu His Val Ser Arg Gln Asn Ser Trp Leu Gly Asp Ile  
 130 135 140  
 Leu Asp Trp Gln Asp Ile Val Ser Phe Val His Glu Asn Ile Glu Thr  
 145 150 155 160  
 Phe Leu Ser Ile Leu Glu Ser Leu Trp Ile Val Met Ser Arg Asn Val  
 165 170 175  
 Ser Leu Leu Phe Thr Thr Val Thr Thr Leu Leu Thr Ile Leu Phe Tyr  
 180 185 190  
 Ser Gly Thr Ala Leu Leu Asn Phe Val Leu Ser Leu Ile Ile Phe Leu  
 195 200 205  
 Thr Thr Leu Phe Tyr Leu Leu Ser Ser Ser Asp Glu Tyr Tyr Lys Pro  
 210 215 220  
 Val Lys Trp Val Ile Ser Leu Thr Pro Leu Ser Gln Pro Gly Pro Ser  
 225 230 235 240  
 Ser Asn Ile Ile Gly Gln Ser Val Glu Glu Ala Ile Arg Gly Val Phe  
 245 250 255  
 Asp Ala Ser Leu Lys Met Ala Gly Phe Tyr Gly Leu Tyr Thr Trp Leu  
 260 265 270  
 Thr His Thr Met Phe Gly Ile Asn Ile Val Phe Ile Pro Ser Ala Leu  
 275 280 285  
 Ala Ala Ile Leu Gly Ala Val Pro Phe Leu Gly Thr Tyr Trp Ala Ala  
 290 295 300  
 Val Pro Ala Val Leu Asp Leu Trp Leu Thr Gln Gly Leu Gly Cys Lys  
 305 310 315 320  
 Ala Ile Leu Leu Met Ile Phe His Leu Leu Pro Thr Tyr Phe Val Asp  
 325 330 335  
 Thr Ala Ile Tyr Ser Asp Ile Ser Gly Gly Gly His Pro Tyr Leu Thr  
 340 345 350  
 Gly Leu Ala Val Ala Gly Gly Ser Ile Leu Pro Arg Pro Gly Arg Ser  
 355 360 365

Asn His Arg Ser Tyr Ser Ser Leu His Thr Cys Gly Cys Phe Gln Tyr  
 370 375 380

Leu  
 385

<210> 1755

<211> 293

<212> PRT

<213> Homo sapiens

<400> 1755

Met Pro Tyr Val Thr Glu Ala Thr Arg Val Gln Leu Val Leu Pro Leu  
 1 5 10 15

Leu Val Ala Glu Ala Ala Ala Ala Pro Ala Phe Leu Glu Ala Phe Ala  
 20 25 30

Ala Asn Val Leu Glu Pro Arg Glu His Ala Leu Leu Thr Leu Leu Leu  
 35 40 45

Val Tyr Gly Pro Arg Glu Gly Gly Arg Gly Ala Pro Asp Pro Phe Leu  
 50 55 60

Gly Val Lys Ala Ala Ala Ala Glu Leu Glu Arg Arg Tyr Pro Gly Thr  
 65 70 75 80

Arg Leu Ala Trp Leu Ala Val Arg Ala Glu Ala Pro Ser Gln Val Arg  
 85 90 95

Leu Met Asp Val Val Ser Lys Lys His Pro Val Asp Thr Leu Phe Phe  
 100 105 110

Leu Thr Thr Val Trp Thr Arg Pro Gly Pro Glu Val Leu Asn Arg Cys  
 115 120 125

Arg Met Asn Ala Ile Ser Gly Trp Gln Ala Phe Phe Pro Val His Phe  
 130 135 140

Gln Glu Phe Asn Pro Ala Leu Ser Pro Gln Arg Ser Pro Pro Gly Pro  
 145 150 155 160

Pro Gly Ala Gly Pro Asp Pro Pro Ser Pro Pro Gly Ala Asp Pro Ser  
 165 170 175

Arg Gly Ala Pro Ile Gly Gly Arg Phe Asp Arg Gln Ala Ser Ala Glu  
 180 185 190

Gly Cys Phe Tyr Asn Ala Asp Tyr Leu Ala Ala Arg Ala Arg Leu Ala  
 195 200 205

Gly Glu Leu Ala Gly Gln Glu Glu Glu Glu Ala Leu Glu Gly Leu Glu  
 210 215 220

Val Met Asp Val Phe Leu Arg Phe Ser Gly Leu His Leu Phe Arg Ala  
 225 230 235 240



Val Glu Pro Gly Leu Val Gln Lys Phe Ser Leu Arg Asp Cys Ser Pro  
 245 250 255

Arg Leu Ser Glu Glu Leu Tyr His Arg Cys Arg Leu Ser Asn Leu Glu  
 260 265 270

Gly Leu Gly Gly Arg Ala Gln Leu Ala Met Ala Leu Phe Glu Gln Glu  
 275 280 285

Gln Ala Asn Ser Thr  
 290

&lt;210&gt; 1756

&lt;211&gt; 566

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1756

Met Gln Val Val Ser His Gly Asp Glu Arg Pro Ala Trp Leu Met Ser  
 1 5 10 15

Glu Thr Leu Arg His Leu His Thr His Phe Gly Ala Asp Tyr Asp Trp  
 20 25 30

Phe Phe Ile Met Gln Asp Asp Thr Tyr Val Gln Ala Pro Arg Leu Ala  
 35 40 45

Ala Leu Ala Gly His Leu Ser Ile Asn Gln Asp Leu Tyr Leu Gly Arg  
 50 55 60

Ala Glu Glu Phe Ile Gly Ala Gly Glu Gln Ala Arg Tyr Cys His Gly  
 65 70 75 80

Gly Phe Gly Tyr Leu Leu Ser Arg Ser Leu Leu Leu Arg Leu Arg Pro  
 85 90 95

His Leu Asp Gly Cys Arg Gly Asp Ile Leu Ser Ala Arg Pro Asp Glu  
 100 105 110

Trp Leu Gly Arg Cys Leu Ile Asp Ser Leu Gly Val Gly Cys Val Ser  
 115 120 125

Gln His Gln Ala Gln Ile Arg Asn Leu Thr Val Leu Thr Pro Glu Gly  
 130 135 140

Glu Ala Gly Leu Ser Trp Pro Val Gly Leu Pro Ala Pro Phe Thr Pro  
 145 150 155 160

His Ser Arg Phe Glu Val Leu Gly Trp Asp Tyr Phe Thr Glu Gln His  
 165 170 175

Thr Phe Ser Cys Ala Asp Gly Ala Pro Lys Cys Pro Leu Gln Gly Ala  
 180 185 190

Ser Arg Ala Asp Val Gly Asp Ala Leu Glu Thr Ala Leu Glu Gln Leu  
 195 200 205

Asn Arg Arg Tyr Gln Pro Arg Leu Arg Phe Gln Lys Gln Arg Leu Leu

210						215						220					
Asn Gly Tyr Arg Arg	Phe Asp Pro Ala Arg Gly Met Glu Tyr Thr Leu																
225					230					235							240
Asp Pro Gly Ser Thr His Ala Ser Glu Arg Gly His Arg Arg Ala Leu																	
				245					250								255
Ala Arg Arg Val Ser Leu Leu Arg Pro Leu Ser Arg Val Glu Ile Leu																	
				260					265								270
Pro Met Pro Tyr Val Thr Glu Ala Thr Arg Val Gln Leu Val Leu Pro																	
				275					280								285
Leu Leu Val Ala Glu Ala Ala Ala Ala Pro Ala Phe Leu Glu Ala Phe																	
				290					295								300
Ala Ala Asn Val Leu Glu Pro Arg Glu His Ala Leu Leu Thr Leu Leu																	
				305					310								320
Leu Val Tyr Gly Pro Arg Glu Gly Gly Arg Gly Ala Pro Asp Pro Phe																	
				325					330								335
Leu Gly Val Lys Ala Ala Ala Ala Glu Leu Glu Arg Arg Tyr Pro Gly																	
				340					345								350
Thr Arg Leu Ala Trp Leu Ala Val Arg Ala Glu Ala Pro Ser Gln Val																	
				355					360								365
Arg Leu Met Asp Val Val Ser Lys Lys His Pro Val Asp Thr Leu Phe																	
				370					375								380
Phe Leu Thr Thr Val Trp Thr Arg Pro Gly Pro Glu Val Leu Asn Arg																	
				385					390								400
Cys Arg Met Asn Ala Ile Ser Gly Trp Gln Ala Phe Phe Pro Val His																	
				405					410								415
Phe Gln Glu Phe Asn Pro Ala Leu Ser Pro Gln Arg Ser Pro Pro Gly																	
				420					425								430
Pro Pro Gly Ala Gly Pro Asp Pro Pro Ser Pro Pro Gly Ala Asp Pro																	
				435					440								445
Ser Arg Gly Ala Pro Ile Ala Gly Arg Phe Asp Arg Gln Ala Ser Ala																	
				450					455								460
Glu Gly Cys Phe Tyr Asn Ala Asp Tyr Leu Ala Ala Arg Ala Arg Leu																	
				465					470								480
Ala Gly Glu Leu Ala Gly Gln Glu Glu Glu Glu Ala Leu Glu Gly Leu																	
				485					490								495
Glu Val Met Asp Val Phe Leu Arg Phe Ser Gly Leu His Leu Phe Arg																	
				500					505								510
Ala Val Glu Pro Gly Leu Val Gln Lys Phe Ser Leu Arg Asp Cys Ser																	
				515					520								525
Pro Arg Leu Ser Glu Glu Leu Tyr His Arg Cys Arg Leu Ser Asn Leu																	

530                                      535                                      540

Glu Gly Leu Gly Gly Arg Ala Gln Leu Ala Met Ala Leu Phe Glu Gln  
 545                                      550                                      555                                      560

Glu Gln Ala Asn Ser Thr  
                                     565

&lt;210&gt; 1757

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (221)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (241)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (246)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1757

Met Glu Phe Ser Trp Leu Glu Thr Arg Trp Ala Arg Pro Phe Tyr Leu  
 1                                      5                                      10                                      15

Ala Phe Val Phe Cys Leu Ala Leu Gly Leu Leu Gln Ala Ile Lys Leu  
                                     20                                      25                                      30

Tyr Leu Arg Arg Gln Arg Leu Leu Arg Asp Leu Arg Pro Phe Pro Ala  
                                     35                                      40                                      45

Pro Pro Thr His Trp Phe Leu Gly His Gln Lys Phe Ile Gln Asp Asp  
                                     50                                      55                                      60

Asn Met Glu Lys Leu Glu Glu Ile Ile Glu Lys Tyr Pro Arg Ala Phe  
                                     65                                      70                                      75                                      80

Pro Phe Trp Ile Gly Pro Phe Gln Ala Phe Phe Cys Ile Tyr Asp Pro  
                                     85                                      90                                      95

Asp Tyr Ala Lys Thr Leu Leu Ser Arg Thr Asp Pro Lys Ser Gln Tyr  
                                     100                                      105                                      110

Leu Gln Lys Phe Ser Pro Pro Leu Leu Gly Lys Gly Leu Ala Ala Leu  
                                     115                                      120                                      125

Asp Gly Pro Lys Trp Phe Gln His Arg Arg Leu Leu Thr Pro Gly Phe  
                                     130                                      135                                      140

His Phe Asn Ile Leu Lys Ala Tyr Ile Glu Val Met Ala His Ser Val  
                                     145                                      150                                      155                                      160

Lys Met Met Leu Asp Lys Trp Glu Lys Ile Cys Ser Thr Gln Asp Thr  
 165 170 175  
 Ser Val Glu Val Tyr Glu His Ile Asn Ser Met Ser Leu Asp Ile Ile  
 180 185 190  
 Met Lys Cys Ala Phe Ser Lys Glu Thr Asn Cys Gln Thr Asn Ser Thr  
 195 200 205  
 His Asp Pro Tyr Ala Lys Ala Ile Leu Asn Ser Ala Xaa Ser Tyr Phe  
 210 215 220  
 Thr Val Val Gln Leu Leu Tyr His Ser Asp Ile Phe Phe Lys Phe Ser  
 225 230 235 240  
 Xaa Gln Gly Tyr Arg Xaa Pro Glu Leu  
 245

<210> 1758  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (74)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (88)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (89)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (91)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1758  
 Ala Gln Gly His Pro Trp Ser Val Arg Thr Gln Leu Pro Arg Ile Pro  
 1 5 10 15

Arg Pro Ser Pro Met Thr Leu Gly Pro Gln Ile Leu Ile Cys His Ser  
 20 25 30

Gly Ser Ala Ala Gly Ser Arg Asn Cys Ile Gly Gln Glu Phe Ala Met  
 35 40 45

Ile Glu Leu Lys Val Thr Ile Ala Leu Ile Leu Leu His Phe Arg Val  
 50 55 60

Thr Pro Asp Pro Thr Arg Pro Leu Thr Xaa Pro Asn His Phe Ile Leu

65		70		75		80									
Lys	Pro	Lys	Asn	Gly	Met	Tyr	Xaa	Xaa	Leu	Xaa	Lys	Leu	Ser	Glu	Cys
				85					90					95	

&lt;210&gt; 1759

&lt;211&gt; 249

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (242)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (247)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (248)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1759

Met	Glu	Phe	Ser	Trp	Leu	Glu	Thr	Arg	Trp	Ala	Arg	Pro	Phe	Tyr	Leu
1				5					10					15	

Ala	Phe	Val	Phe	Cys	Leu	Ala	Leu	Gly	Leu	Leu	Gln	Ala	Ile	Lys	Leu
		20						25					30		

Tyr	Leu	Arg	Arg	Gln	Arg	Leu	Leu	Arg	Asp	Leu	Arg	Pro	Phe	Pro	Ala
		35					40					45			

Pro	Pro	Thr	His	Trp	Phe	Leu	Gly	His	Gln	Lys	Phe	Ile	Gln	Asp	Asp
		50					55				60				

Asn	Met	Glu	Lys	Leu	Glu	Glu	Ile	Ile	Glu	Lys	Tyr	Pro	Arg	Ala	Phe
65					70					75					80

Pro	Phe	Trp	Ile	Gly	Pro	Phe	Gln	Ala	Phe	Phe	Cys	Ile	Tyr	Asp	Pro
			85						90					95	

Asp	Tyr	Ala	Lys	Thr	Leu	Leu	Ser	Arg	Thr	Asp	Pro	Lys	Ser	Gln	Tyr
		100						105					110		

Leu	Gln	Lys	Phe	Ser	Pro	Pro	Leu	Leu	Gly	Lys	Gly	Leu	Ala	Ala	Leu
		115					120					125			

Asp	Gly	Pro	Lys	Trp	Phe	Gln	His	Arg	Arg	Leu	Leu	Thr	Pro	Gly	Phe
	130					135					140				

His	Phe	Asn	Ile	Leu	Lys	Ala	Tyr	Ile	Glu	Val	Met	Ala	His	Ser	Val
145					150					155					160

Lys Met Met Leu Asp Lys Trp Glu Lys Ile Cys Ser Thr Gln Asp Thr  
 165 170 175  
 Ser Val Glu Val Tyr Glu His Ile Asn Ser Met Ser Leu Asp Ile Ile  
 180 185 190  
 Met Lys Cys Ala Phe Ser Lys Glu Thr Asn Cys Gln Thr Asn Ser Thr  
 195 200 205  
 His Asp Pro Tyr Ala Lys Ala Ile Phe Glu Leu Ser Lys Ile Ile Phe  
 210 215 220  
 His Arg Leu Tyr Ser Cys Cys Ile Thr Val Thr Tyr Phe Ser Asn Ser  
 225 230 235 240  
 Ala Xaa Arg Val Thr Val Xaa Xaa Ser  
 245

<210> 1760  
 <211> 509  
 <212> PRT  
 <213> Homo sapiens

<400> 1760

Met Glu Phe Ser Trp Leu Glu Thr Arg Trp Ala Arg Pro Phe Tyr Leu  
 1 5 10 15  
 Ala Phe Val Phe Cys Leu Ala Leu Gly Leu Leu Gln Ala Ile Lys Leu  
 20 25 30  
 Tyr Leu Arg Arg Gln Arg Leu Leu Arg Asp Leu Arg Pro Phe Pro Ala  
 35 40 45  
 Pro Pro Thr His Trp Phe Leu Gly His Gln Lys Phe Ile Gln Asp Asp  
 50 55 60  
 Asn Met Glu Lys Leu Glu Glu Ile Ile Glu Lys Tyr Pro Arg Ala Phe  
 65 70 75 80  
 Pro Phe Trp Ile Gly Pro Phe Gln Ala Phe Phe Cys Ile Tyr Asp Pro  
 85 90 95  
 Asp Tyr Ala Lys Thr Leu Leu Ser Arg Thr Asp Pro Lys Ser Gln Tyr  
 100 105 110  
 Leu Gln Lys Phe Ser Pro Pro Leu Leu Gly Lys Gly Leu Ala Ala Leu  
 115 120 125  
 Asp Gly Pro Lys Trp Phe Gln His Arg Arg Leu Leu Thr Pro Gly Phe  
 130 135 140  
 His Phe Asn Ile Leu Lys Ala Tyr Ile Glu Val Met Ala His Ser Val  
 145 150 155 160  
 Lys Met Met Leu Asp Lys Trp Glu Lys Ile Cys Ser Thr Gln Asp Thr  
 165 170 175

Ser Val Glu Val Tyr Glu His Ile Asn Ser Met Ser Leu Asp Ile Ile  
 180 185 190  
 Met Lys Cys Ala Phe Ser Lys Glu Thr Asn Cys Gln Thr Asn Ser Thr  
 195 200 205  
 His Asp Pro Tyr Ala Lys Ala Ile Phe Glu Leu Ser Lys Ile Ile Phe  
 210 215 220  
 His Arg Leu Tyr Ser Leu Leu Tyr His Ser Asp Ile Ile Phe Lys Leu  
 225 230 235 240  
 Ser Pro Gln Gly Tyr Arg Phe Gln Lys Leu Ser Arg Val Leu Asn Gln  
 245 250 255  
 Tyr Thr Asp Thr Ile Ile Gln Glu Arg Lys Lys Ser Leu Gln Ala Gly  
 260 265 270  
 Val Lys Gln Asp Asn Thr Pro Lys Arg Lys Tyr Gln Asp Phe Leu Asp  
 275 280 285  
 Ile Val Leu Ser Ala Lys Asp Glu Ser Gly Ser Ser Phe Ser Asp Ile  
 290 295 300  
 Asp Val His Ser Glu Val Ser Thr Phe Leu Leu Ala Gly His Asp Thr  
 305 310 315 320  
 Leu Ala Ala Ser Ile Ser Trp Ile Leu Tyr Cys Leu Ala Leu Asn Pro  
 325 330 335  
 Glu His Gln Glu Arg Cys Arg Glu Glu Val Arg Gly Ile Leu Gly Asp  
 340 345 350  
 Gly Ser Ser Ile Thr Trp Asp Gln Leu Gly Glu Met Ser Tyr Thr Thr  
 355 360 365  
 Met Cys Ile Lys Glu Thr Cys Arg Leu Ile Pro Ala Val Pro Ser Ile  
 370 375 380  
 Ser Arg Asp Leu Ser Lys Pro Leu Thr Phe Pro Asp Gly Cys Thr Leu  
 385 390 395 400  
 Pro Ala Gly Ile Thr Val Val Leu Ser Ile Trp Gly Leu His His Asn  
 405 410 415  
 Pro Ala Val Trp Lys Asn Pro Lys Val Phe Asp Pro Leu Arg Phe Ser  
 420 425 430  
 Gln Glu Asn Ser Asp Gln Arg His Pro Tyr Ala Tyr Leu Pro Phe Ser  
 435 440 445  
 Ala Gly Ser Arg Asn Cys Ile Gly Gln Glu Phe Ala Met Ile Glu Leu  
 450 455 460  
 Lys Val Thr Ile Ala Leu Ile Leu Leu His Phe Arg Val Thr Pro Asp  
 465 470 475 480  
 Pro Thr Arg Pro Leu Thr Phe Pro Asn His Phe Ile Leu Lys Pro Lys  
 485 490 495

Asn Gly Met Tyr Leu His Leu Lys Lys Leu Ser Glu Cys  
 500 505

<210> 1761  
 <211> 143  
 <212> PRT  
 <213> Homo sapiens

<400> 1761  
 Met Phe Lys Trp Val Arg Arg Thr Leu Ile Ala Leu Val Gln Val Thr  
 1 5 10 15  
 Phe Gly Arg Thr Ile Asn Lys Gln Ile Arg Asp Thr Val Ser Trp Ile  
 20 25 30  
 Phe Ser Glu Gln Met Leu Val Tyr Tyr Ile Asn Ile Phe Arg Asp Ala  
 35 40 45  
 Phe Trp Pro Asn Gly Lys Leu Ala Pro Pro Thr Thr Ile Arg Ser Lys  
 50 55 60  
 Glu Gln Ser Gln Glu Thr Lys Gln Arg Ala Gln Gln Lys Leu Leu Glu  
 65 70 75 80  
 Asn Ile Pro Asp Met Leu Gln Ser Leu Val Gly Gln Gln Asn Ala Arg  
 85 90 95  
 His Gly Ile Ile Lys Ile Phe Asn Ala Leu Gln Glu Thr Arg Ala Asn  
 100 105 110  
 Lys His Leu Leu Tyr Ala Leu Met Glu Leu Leu Leu Ile Glu Leu Cys  
 115 120 125  
 Pro Glu Leu Arg Val His Leu Asp Gln Leu Lys Ala Gly Gln Val  
 130 135 140

<210> 1762  
 <211> 143  
 <212> PRT  
 <213> Homo sapiens

<400> 1762  
 Met Phe Lys Trp Val Arg Arg Thr Leu Ile Ala Leu Val Gln Val Thr  
 1 5 10 15  
 Phe Gly Arg Thr Ile Asn Lys Gln Ile Arg Asp Thr Val Ser Trp Ile  
 20 25 30  
 Phe Ser Glu Gln Met Leu Val Tyr Tyr Ile Asn Ile Phe Arg Asp Ala  
 35 40 45  
 Phe Trp Pro Asn Gly Lys Leu Ala Pro Pro Thr Thr Ile Arg Ser Lys  
 50 55 60  
 Glu Gln Ser Gln Glu Thr Lys Gln Arg Ala Gln Gln Lys Leu Leu Glu  
 65 70 75 80



Asn Ile Pro Asp Met Leu Gln Ser Leu Val Gly Gln Gln Asn Ala Arg  
                     85                    90                    95

His Gly Ile Ile Lys Ile Phe Asn Ala Leu Gln Glu Thr Arg Ala Asn  
                     100                    105                    110

Lys His Leu Leu Tyr Ala Leu Met Glu Leu Leu Leu Ile Glu Leu Cys  
                     115                    120                    125

Pro Glu Leu Arg Val His Leu Asp Gln Leu Lys Ala Gly Gln Val  
                     130                    135                    140

<210> 1763  
 <211> 88  
 <212> PRT  
 <213> Homo sapiens

<400> 1763  
 Met Lys Ser Leu Ile Lys Thr Tyr Phe Leu Leu Trp Thr Leu Lys Lys  
   1                    5                    10                    15

Leu Leu Pro Leu Ser Thr Leu Ile Pro Ile Met Leu Ser Pro Leu Asp  
                     20                    25                    30

Ile Phe Phe Ser Asp Asn Pro His Ile Asp Cys Ser Gly His His Phe  
                     35                    40                    45

Val Pro Tyr Leu Leu Ile Gly Leu Asp Thr Asp Pro Gln Phe Thr Cys  
                     50                    55                    60

Leu Tyr Leu Leu Ile Leu Thr Leu Leu Val Phe Val Phe Ser Leu Thr  
   65                    70                    75                    80

Leu Leu Ser Pro Pro Ser Pro Gly  
                     85

<210> 1764  
 <211> 88  
 <212> PRT  
 <213> Homo sapiens

<400> 1764  
 Met Lys Ser Leu Ile Lys Thr Tyr Phe Leu Leu Trp Thr Leu Lys Lys  
   1                    5                    10                    15

Leu Leu Pro Leu Ser Thr Leu Ile Pro Ile Met Leu Ser Pro Leu Asp  
                     20                    25                    30

Ile Phe Phe Ser Asp Asn Pro His Ile Asp Cys Ser Gly His His Phe  
                     35                    40                    45

Val Pro Tyr Leu Leu Ile Gly Leu Asp Thr Asp Pro Gln Phe Thr Cys  
                     50                    55                    60

Leu Tyr Leu Leu Ile Leu Thr Leu Leu Val Phe Val Phe Ser Leu Thr

65

70

75

80

Leu Leu Ser Pro Pro Ser Pro Gly  
85

&lt;210&gt; 1765

&lt;211&gt; 231

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (146)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (177)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (193)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (199)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (208)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (222)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (231)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1765

Met Ala Leu Ser Ser Leu Ile Val Ile Leu Leu Val Val Phe Ala Leu  
1 5 10 15

Val Leu His Gly Gln Asn Lys Lys Tyr Lys Asn Cys Ser Thr Gly Lys  
20 25 30

Gly Ile Ser Thr Met Glu Glu Ser Val Thr Leu Asp Asn Gly Gly Phe  
35 40 45

Ala Ala Leu Glu Leu Ser Ser Arg His Leu Asn Val Lys Ser Thr Phe  
50 55 60

Ser Lys Lys Asn Gly Thr Arg Ser Pro Pro Arg Pro Ser Pro Gly Gly  
 65 70 75 80  
 Leu His Tyr Ser Asp Glu Asp Ile Cys Asn Lys Tyr Asn Gly Ala Val  
 85 90 95  
 Leu Thr Glu Ser Val Ser Leu Lys Glu Lys Ser Ala Asp Ala Ser Glu  
 100 105 110  
 Ser Glu Ala Thr Asp Ser Asp Tyr Glu Asp Ala Leu Pro Lys His Ser  
 115 120 125  
 Phe Val Asn His Tyr Met Ser Asp Pro Thr Tyr Tyr Asn Ser Trp Lys  
 130 135 140  
 Arg Xaa Ala Gln Gly Pro Arg Thr Cys Ala Ala Gln Val Arg Gly Gly  
 145 150 155 160  
 Gly Gly Leu Arg Gly Gly Arg Ala Ala Ala Pro Gly His His His Ala  
 165 170 175  
 Xaa Arg Gly Arg Arg Leu His Pro Arg Trp Pro Arg Arg Ala Asn Phe  
 180 185 190  
 Xaa Tyr Arg Leu Leu Leu Xaa Arg Val Ser Lys Ser Ala Ala Leu Xaa  
 195 200 205  
 Gln Gly Gly Thr Glu Ala Thr Phe Arg Ser Leu Phe Leu Xaa Arg Gln  
 210 215 220  
 Phe Asn Ser Asn Lys Leu Xaa  
 225 230

&lt;210&gt; 1766

&lt;211&gt; 127

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1766

Glu Gly Phe Phe Lys Arg Leu Phe Val Thr Ser Leu Gln Glu Ala Gly  
 1 5 10 15  
 Leu Phe Leu Phe Leu Phe Phe Leu Arg Glu Gly Val Phe His Trp Cys  
 20 25 30  
 Asn Gly Leu Ala Pro Pro Gly Pro Gly Arg Thr Ser Asp Leu Pro Ser  
 35 40 45  
 Pro Gly Phe Leu Arg Leu Gln Asp Gln Leu Gly Arg Val Lys Arg Gly  
 50 55 60  
 Glu Gly Val Glu Gly Gln Val Arg Ser Gln Ser Cys Pro Gly Arg Pro  
 65 70 75 80  
 Pro Ser Leu Ser Thr Ser Ser Ser Arg Glu Pro Ala Ala His Thr Leu  
 85 90 95  
 Leu Asn Ala Gly His Pro Arg Arg Leu Leu Gly Phe Glu Glu Gln Thr  
 1125

	100		105		110
Phe	Phe	Pro	Gly	Leu	Ser
	115			120	
		Ala	Phe	Cys	Pro
			Asn	Phe	Ile
				Cys	Phe
				125	

&lt;210&gt; 1767

&lt;211&gt; 240

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (192)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (222)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (235)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1767

Met	Ala	Leu	Ser	Ser	Leu	Ile	Val	Ile	Leu	Leu	Val	Val	Phe	Ala	Leu
1				5					10					15	

Val	Leu	His	Gly	Gln	Asn	Lys	Lys	Tyr	Lys	Asn	Cys	Ser	Thr	Gly	Lys
			20					25					30		

Gly	Ile	Ser	Thr	Met	Glu	Glu	Ser	Val	Thr	Leu	Asp	Asn	Gly	Gly	Phe
		35					40					45			

Ala	Ala	Leu	Glu	Leu	Ser	Ser	Arg	His	Leu	Asn	Val	Lys	Ser	Thr	Phe
	50					55					60				

Ser	Lys	Lys	Asn	Gly	Thr	Arg	Ser	Pro	Pro	Arg	Pro	Ser	Pro	Gly	Gly
65					70					75				80	

Leu	His	Tyr	Ser	Asp	Glu	Asp	Ile	Cys	Asn	Lys	Tyr	Asn	Gly	Ala	Val
				85					90					95	

Leu	Thr	Glu	Ser	Val	Ser	Leu	Lys	Glu	Lys	Ser	Ala	Asp	Ala	Ser	Glu
			100					105					110		

Ser	Glu	Ala	Thr	Asp	Ser	Asp	Tyr	Glu	Asp	Ala	Leu	Pro	Lys	His	Ser
	115						120					125			

Phe	Val	Asn	His	Tyr	Met	Ser	Asp	Pro	Thr	Tyr	Tyr	Asn	Ser	Trp	Lys
	130					135					140				

Arg	Arg	Ala	Gln	Gly	Pro	Arg	Thr	Cys	Ala	Ala	Gln	Val	Arg	Gly	Gly
145					150					155					160

Gly	Gly	Leu	Arg	Gly	Gly	Arg	Ala	Ala	Ala	Pro	Gly	His	His	His	Ala
				165					170					175	

Glu Arg Gly Arg Arg Leu His Pro Arg Trp Pro Arg Arg Ala Asn Xaa  
                           180                          185                          190

Ala His Arg Leu Leu Leu Leu Arg Val Ser Lys Ala Pro Arg Leu Pro  
                           195                          200                          205

Gln Gly Gly Thr Glu Ala Thr Phe Arg Ser Leu Phe Leu Xaa Arg Gln  
                           210                          215                          220

Ser Thr Pro Ile Thr Glu Leu Lys Phe Leu Xaa Lys Lys Lys Lys Ile  
 225                          230                          235                          240

<210> 1768  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 1768  
 Met Tyr Leu Pro Cys Gln Met Ala Cys Ser Leu Phe Val Leu Phe Val  
   1                          5                          10                          15

Ile Trp Leu Leu Leu Lys Ile Phe Gln Ala Gly Pro Gln Leu Met Ser  
                           20                          25                          30

Leu Ala His Gly Ser Ala Thr Leu Val Leu Asp Gly Met Asn Ile Phe  
                           35                          40                          45

Gly Pro Ser Gly Tyr Gly Gln Glu Cys Arg Val Ala Cys Asn Tyr Phe  
   50                          55                          60

Arg Lys Cys Arg Val Pro Ser Trp Ala Arg Cys Leu Met Pro Val Ile  
   65                          70                          75                          80

Pro Ala Leu Trp Glu Ala Glu Ala Ala Asp Gln Leu Arg Leu Gly Val  
                           85                          90                          95

<210> 1769  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 1769  
 Leu Tyr Gln Glu Lys Pro Leu Met Trp Pro Arg Thr Ser Leu Leu Tyr  
   1                          5                          10                          15

Val Val Pro Arg Trp Leu Leu Pro Cys Ser Ser Leu Pro Cys Pro Leu  
                           20                          25                          30

Pro Glu Ile Lys Asn Ser Leu Thr Glu Lys Lys Lys Lys Lys Lys Lys

35                                      40                                      45  
 Asn Lys Lys Lys Lys Lys Gly Arg Pro  
     50                                      55  
  
 <210> 1770  
 <211> 104  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 1770  
 Met Tyr Leu Pro Cys Gln Met Ala Cys Ser Leu Phe Val Leu Phe Val  
     1                                      5                                      10                                      15  
 Ile Trp Leu Leu Leu Lys Ile Phe Gln Ala Gly Pro Gln Leu Met Ser  
                     20                                      25                                      30  
 Leu Ala His Gly Ser Ala Thr Leu Val Leu Asp Gly Met Asn Ile Phe  
                     35                                      40                                      45  
 Gly Pro Ser Gly Tyr Gly Gln Glu Cys Arg Val Ala Cys Asn Tyr Phe  
                     50                                      55                                      60  
 Arg Lys Cys Arg Val Pro Ser Trp Ala Arg Cys Leu Met Pro Val Ile  
                     65                                      70                                      75                                      80  
 Pro Ala Leu Trp Glu Ala Glu Ala Gly Arg Ser Ala Glu Val Arg Ser  
                     85                                      90                                      95  
 Leu Arg Pro Ala Trp Pro Thr Trp  
                     100

<210> 1771  
 <211> 206  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (176)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (180)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (188)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (189)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (198)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (200)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (206)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1771

Met	Ala	Asn	Phe	Lys	Gly	His	Ala	Leu	Pro	Gly	Ser	Phe	Phe	Leu	Ile
1				5				10						15	

Ile	Gly	Leu	Cys	Trp	Ser	Val	Lys	Tyr	Pro	Leu	Lys	Tyr	Phe	Ser	His
		20					25						30		

Thr	Arg	Lys	Asn	Ser	Pro	Leu	His	Tyr	Tyr	Gln	Arg	Leu	Glu	Ile	Val
		35					40					45			

Glu	Ala	Ala	Ile	Arg	Thr	Leu	Phe	Ser	Val	Thr	Val	Ser	Gly	Ile	Val
	50					55					60				

Asp	Met	Leu	Thr	Tyr	Leu	Val	Ser	His	Val	Pro	Leu	Gly	Val	Asp	Arg
65					70					75					80

Leu	Val	Met	Ala	Val	Ala	Val	Phe	Met	Glu	Gly	Phe	Leu	Phe	Tyr	Tyr
			85						90					95	

His	Val	His	Asn	Arg	Pro	Pro	Leu	Asp	Gln	His	Ile	His	Ser	Leu	Leu
			100					105					110		

Leu	Tyr	Ala	Leu	Phe	Gly	Gly	Cys	Val	Ser	Ile	Ser	Leu	Glu	Val	Ile
	115					120						125			

Phe	Arg	Asp	His	Ile	Val	Leu	Glu	Leu	Phe	Arg	Thr	Ser	Leu	Ile	Ile
	130					135					140				

Leu	Gln	Gly	Thr	Trp	Phe	Trp	Gln	Ile	Gly	Phe	Val	Leu	Phe	Pro	Pro
145					150					155					160

Phe	Gly	Thr	Pro	Glu	Trp	Asp	Gln	Lys	Asp	Asp	Ala	Asn	Leu	Met	Xaa
				165					170					175	

Ile	Thr	Met	Xaa	Phe	Cys	Cys	Thr	Thr	Trp	Leu	Xaa	Xaa	Thr	Leu	Trp
		180						185						190	

Pro	Gln	Leu	Phe	Ser	Xaa	Tyr	Xaa	Leu	Phe	Asp	Ser	Asp	Xaa		
	195						200					205			

&lt;210&gt; 1772

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (59)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1772

Met	Ala	Asn	Phe	Lys	Gly	His	Ala	Leu	Pro	Gly	Ser	Phe	Phe	Leu	Ile
1				5					10					15	

Ile	Gly	Leu	Cys	Trp	Ser	Val	Lys	Tyr	Pro	Leu	Lys	Tyr	Phe	Ser	His
			20					25					30		

Thr	Arg	Lys	Asn	Ser	Pro	Leu	His	Tyr	Tyr	Gln	Arg	Leu	Glu	Ile	Val
		35					40					45			

Glu	Ala	Ala	Ile	Arg	Thr	Leu	Phe	Ser	Val	Xaa	Gly	Ile	Leu	Ala	Glu
	50					55					60				

Gln	Phe	Val	Pro	Asp	Gly	Pro	His	Leu	His	Leu	Tyr	His	Glu	Asn	His
65					70					75					80

Trp	Ile	Lys	Leu	Met	Asn	Trp	Gln	His	Ser	Thr	Met	Tyr	Leu	Phe	Phe
				85					90					95	

Ala	Val	Ser	Gly	Ile	Val	Asp	Met	Leu	Thr	Tyr	Leu	Val	Ser	His	Val
			100					105					110		

Pro	Leu	Gly	Val	Asp	Arg	Leu	Val	Met	Ala	Val	Ala	Val	Phe	Met	Glu
		115					120					125			

Gly	Phe	Leu	Phe	Tyr	Tyr	His	Val	His	Asn	Arg	Pro	Pro	Leu	Asp	Gln
130						135					140				

His	Ile	His	Ser	Leu	Leu	Leu	Tyr	Ala	Leu	Phe	Gly	Gly	Cys	Val	Ser
145					150					155					160

Ile	Ser	Leu	Glu	Val	Ile	Phe	Arg	Asp	His	Ile	Val	Leu	Glu	Leu	Phe
			165						170					175	

Arg	Thr	Ser	Leu	Ile	Ile	Leu	Gln	Gly	Thr	Trp	Phe	Trp	Gln	Ile	Gly
			180					185					190		

Phe	Val	Leu	Phe	Pro	Pro	Phe	Gly	Thr	Pro	Glu	Trp	Asp	Gln	Lys	Asp
		195					200					205			

Asp	Ala	Asn	Leu	Met	Phe	Ile	Thr	Met	Cys	Phe	Cys	Trp	His	Tyr	Leu
210						215					220				

Ala	Ala	Leu	Ser	Ile	Val	Ala	Val	Asn	Tyr	Ser	Leu	Val	Tyr	Cys	Leu
225					230					235					240

Leu	Thr	Arg	Met	Lys	Arg	His	Gly	Arg	Gly	Glu	Ile	Ile	Gly	Ile	Gln
				245					250					255	

Lys	Leu	Asn	Ser	Asp	Asp	Thr	Tyr	Gln	Thr	Ala	Leu	Leu	Ser	Gly	Ser
			260					265					270		



Asp Glu Glu  
275

<210> 1773  
<211> 237  
<212> PRT  
<213> Homo sapiens

<400> 1773

Met	Ala	Asn	Phe	Lys	Gly	His	Ala	Leu	Pro	Gly	Ser	Phe	Phe	Leu	Ile
1				5					10					15	
Ile	Gly	Leu	Cys	Trp	Ser	Val	Lys	Tyr	Pro	Leu	Lys	Tyr	Phe	Ser	His
		20						25					30		
Thr	Arg	Lys	Asn	Ser	Pro	Leu	His	Tyr	Tyr	Gln	Arg	Leu	Glu	Ile	Val
		35					40					45			
Glu	Ala	Ala	Ile	Arg	Thr	Leu	Phe	Ser	Val	Thr	Val	Ser	Gly	Ile	Val
	50					55					60				
Asp	Met	Leu	Thr	Tyr	Leu	Val	Ser	His	Val	Pro	Leu	Gly	Val	Asp	Arg
65					70					75					80
Leu	Val	Met	Ala	Val	Ala	Val	Phe	Met	Glu	Gly	Phe	Leu	Phe	Tyr	Tyr
			85						90					95	
His	Val	His	Asn	Arg	Pro	Pro	Leu	Asp	Gln	His	Ile	His	Ser	Leu	Leu
			100					105					110		
Leu	Tyr	Ala	Leu	Phe	Gly	Gly	Cys	Val	Ser	Ile	Ser	Leu	Glu	Val	Ile
		115					120						125		
Phe	Arg	Asp	His	Ile	Val	Leu	Glu	Leu	Phe	Arg	Thr	Ser	Leu	Ile	Ile
	130					135					140				
Leu	Gln	Gly	Thr	Trp	Phe	Trp	Gln	Ile	Gly	Phe	Val	Leu	Phe	Pro	Pro
145					150					155					160
Phe	Gly	Thr	Pro	Glu	Trp	Asp	Gln	Lys	Asp	Asp	Ala	Asn	Leu	Met	Phe
			165						170					175	
Ile	Thr	Met	Cys	Phe	Cys	Trp	His	Tyr	Leu	Ala	Ala	Leu	Ser	Ile	Val
		180						185					190		
Ala	Val	Asn	Tyr	Ser	Leu	Val	Tyr	Cys	Leu	Leu	Thr	Arg	Met	Lys	Arg
		195					200					205			
His	Gly	Arg	Gly	Glu	Ile	Ile	Gly	Ile	Gln	Lys	Leu	Asn	Ser	Asp	Asp
	210					215					220				
Thr	Tyr	Gln	Thr	Ala	Leu	Leu	Ser	Gly	Ser	Asp	Glu	Glu			
225					230					235					

<210> 1774  
<211> 69

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1774

Met His Gly Met His Ala Ala Gly Thr Gly Thr Glu Leu Thr Leu Ser  
 1 5 10 15

Gly Cys Gln Pro Leu Ser Thr Leu Leu Leu Leu Leu Tyr Tyr Cys  
 20 25 30

Pro Ser Phe Val His Ser Ile Asn Met Cys Lys Ala Ala Ala Leu Ser  
 35 40 45

Leu Pro Trp Ala Ala Gly Gln His Arg Gly Gly Leu Ser Gly Gly Ala  
 50 55 60

Gly Glu Arg Met Ala  
 65

&lt;210&gt; 1775

&lt;211&gt; 69

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1775

Met His Gly Met His Ala Ala Gly Thr Gly Thr Glu Leu Thr Leu Ser  
 1 5 10 15

Gly Cys Gln Pro Leu Ser Thr Leu Leu Leu Leu Leu Tyr Tyr Cys  
 20 25 30

Pro Ser Phe Val His Ser Ile Asn Met Cys Lys Ala Ala Ala Leu Ser  
 35 40 45

Leu Pro Trp Ala Ala Gly Gln His Arg Gly Gly Leu Ser Gly Gly Ala  
 50 55 60

Gly Glu Arg Met Ala  
 65

&lt;210&gt; 1776

&lt;211&gt; 222

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1776

Met Thr Gly Gln Ile Pro Arg Leu Ser Lys Val Asn Leu Phe Thr Leu  
 1 5 10 15

Leu Ser Leu Trp Met Glu Leu Phe Pro Ala Glu Ala Gln Arg Gln Lys  
 20 25 30

Ser Gln Lys Asn Glu Glu Gly Lys His Gly Pro Leu Gly Asp Asn Glu  
 35 40 45

Glu Arg Thr Arg Val Ser Thr Asp Lys Arg Gln Val Lys Arg Thr Gly

50                      55                      60  
 Leu Val Val Val Lys Asn Met Lys Ile Val Gly Leu His Cys Ser Ser  
 65                      70                      75                      80  
 Glu Asp Leu His Ala Gly Gln Ile Ala Leu Ile Lys His Gly Ser Arg  
 85                      90                      95  
 Leu Lys Asn Cys Asp Leu Tyr Phe Ser Arg Lys Pro Cys Ser Ala Cys  
 100                      105                      110  
 Leu Lys Met Ile Val Asn Ala Gly Val Asn Arg Ile Ser Tyr Trp Pro  
 115                      120                      125  
 Ala Asp Pro Glu Ile Ser Leu Leu Thr Glu Ala Ser Ser Ser Glu Asp  
 130                      135                      140  
 Ala Lys Leu Asp Ala Lys Ala Val Glu Arg Leu Lys Ser Asn Ser Arg  
 145                      150                      155                      160  
 Ala His Val Cys Val Leu Leu Gln Pro Leu Val Cys Tyr Met Val Gln  
 165                      170                      175  
 Phe Val Glu Glu Thr Ser Tyr Lys Cys Asp Phe Ile Gln Lys Ile Thr  
 180                      185                      190  
 Lys Thr Leu Pro Asp Ala Asn Thr Asp Phe Tyr Tyr Glu Cys Lys Gln  
 195                      200                      205  
 Glu Arg Ile Lys Glu Tyr Glu Met Leu Lys Lys Lys Lys Lys  
 210                      215                      220

&lt;210&gt; 1777

&lt;211&gt; 105

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (71)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (104)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1777

Ile Leu Lys Val Leu Lys Val Trp Ser Phe Gln Leu Phe Gln Ile Ala  
 1                      5                      10                      15

Val Cys Asp Phe Ser His Phe Tyr Leu Leu Arg Asn Ile His Lys Ile  
 20                      25                      30

Ile Pro Lys Met Lys Val His Phe Leu Phe Ser Pro Arg Leu Glu Arg  
 35                      40                      45

Gly Gly Leu Gly Cys Phe Met Arg Asn Val Phe Leu Asp Leu Arg Trp

50                      55                      60  
 Ser Gly Leu Pro Leu Leu Xaa Phe Pro Ala Phe Pro Pro His His Thr  
 65                      70                      75                      80  
 Ala Ser Leu Gly Phe Leu Pro Val Ser Gln Asn Tyr Thr His Asp His  
                     85                      90                      95  
 Pro Asn Ile Gly Ser Met Pro Xaa Leu  
                     100                      105

<210> 1778  
 <211> 489  
 <212> PRT  
 <213> Homo sapiens

<400> 1778  
 Met Thr Gly Gln Ile Pro Arg Leu Ser Lys Val Asn Leu Phe Thr Leu  
   1                      5                      10                      15  
 Leu Ser Leu Trp Met Glu Leu Phe Pro Ala Glu Ala Gln Arg Gln Lys  
                     20                      25                      30  
 Ser Gln Lys Asn Glu Glu Gly Lys His Gly Pro Leu Gly Asp Asn Glu  
                     35                      40                      45  
 Glu Arg Thr Arg Val Ser Thr Asp Lys Arg Gln Val Lys Arg Thr Gly  
   50                      55                      60  
 Leu Val Val Val Lys Asn Met Lys Ile Val Gly Leu His Cys Ser Ser  
   65                      70                      75                      80  
 Glu Asp Leu His Ala Gly Gln Ile Ala Leu Ile Lys His Gly Ser Arg  
                     85                      90                      95  
 Leu Lys Asn Cys Asp Leu Tyr Phe Ser Arg Lys Pro Cys Ser Ala Cys  
                     100                      105                      110  
 Leu Lys Met Ile Val Asn Ala Gly Val Asn Arg Ile Ser Tyr Trp Pro  
   115                      120                      125  
 Ala Asp Pro Glu Ile Ser Leu Leu Thr Glu Ala Ser Ser Ser Glu Asp  
   130                      135                      140  
 Ala Lys Leu Asp Ala Lys Ala Val Glu Arg Leu Lys Ser Asn Ser Arg  
   145                      150                      155                      160  
 Ala His Val Cys Val Leu Leu Gln Pro Leu Val Cys Tyr Met Val Gln  
                     165                      170                      175  
 Phe Val Glu Glu Thr Ser Tyr Lys Cys Asp Phe Ile Gln Lys Ile Thr  
                     180                      185                      190  
 Lys Thr Leu Pro Asp Ala Asn Thr Asp Phe Tyr Tyr Glu Cys Lys Gln  
   195                      200                      205  
 Glu Arg Ile Lys Glu Tyr Glu Met Leu Phe Leu Val Ser Asn Glu Glu  
   210                      215                      220

Met His Lys Gln Ile Leu Met Thr Ile Gly Leu Glu Asn Leu Cys Glu  
 225 230 235 240  
 Asn Pro Tyr Phe Ser Asn Leu Arg Gln Asn Met Lys Asp Leu Ile Leu  
 245 250 255  
 Leu Leu Ala Thr Val Ala Ser Ser Val Pro Asn Phe Lys His Phe Gly  
 260 265 270  
 Phe Tyr Arg Ser Asn Pro Glu Gln Ile Asn Glu Ile His Asn Gln Ser  
 275 280 285  
 Leu Pro Gln Glu Ile Ala Arg His Cys Met Val Gln Ala Arg Leu Leu  
 290 295 300  
 Ala Tyr Arg Thr Glu Asp His Lys Thr Gly Val Gly Ala Val Ile Trp  
 305 310 315 320  
 Ala Glu Gly Lys Ser Arg Ser Cys Asp Gly Thr Gly Ala Met Tyr Phe  
 325 330 335  
 Val Gly Cys Gly Tyr Asn Ala Phe Pro Val Gly Ser Glu Tyr Ala Asp  
 340 345 350  
 Phe Pro His Met Asp Asp Lys Gln Lys Asp Arg Glu Ile Arg Lys Phe  
 355 360 365  
 Arg Tyr Ile Ile His Ala Glu Gln Asn Ala Leu Thr Phe Arg Cys Gln  
 370 375 380  
 Glu Ile Lys Pro Glu Glu Arg Ser Met Ile Phe Val Thr Lys Cys Pro  
 385 390 395 400  
 Cys Asp Glu Cys Val Pro Leu Ile Lys Gly Ala Gly Ile Lys Gln Ile  
 405 410 415  
 Tyr Ala Gly Asp Val Asp Val Gly Lys Lys Lys Ala Asp Ile Ser Tyr  
 420 425 430  
 Met Arg Phe Gly Glu Leu Glu Gly Val Ser Lys Phe Thr Trp Gln Leu  
 435 440 445  
 Asn Pro Ser Gly Ala Tyr Gly Leu Glu Gln Asn Glu Pro Glu Arg Arg  
 450 455 460  
 Glu Asn Gly Val Leu Arg Pro Val Pro Gln Lys Glu Glu Gln His Gln  
 465 470 475 480  
 Asp Lys Lys Leu Arg Leu Gly Ile His  
 485

&lt;210&gt; 1779

&lt;211&gt; 267

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1779

Met Thr Gly Gln Ile Pro Arg Leu Ser Lys Val Asn Leu Phe Thr Leu  
 1 5 10 15  
 Leu Ser Leu Trp Met Glu Leu Phe Pro Ala Glu Ala Gln Arg Gln Lys  
 20 25 30  
 Ser Gln Lys Asn Glu Glu Gly Lys His Gly Pro Leu Gly Asp Asn Glu  
 35 40 45  
 Glu Arg Thr Arg Val Ser Thr Asp Lys Arg Gln Val Lys Arg Thr Gly  
 50 55 60  
 Leu Val Val Val Lys Asn Met Lys Ile Val Gly Leu His Cys Ser Ser  
 65 70 75 80  
 Glu Asp Leu His Ala Gly Gln Ile Ala Leu Ile Lys His Gly Ser Arg  
 85 90 95  
 Leu Lys Asn Cys Asp Leu Tyr Phe Ser Arg Lys Pro Cys Ser Ala Cys  
 100 105 110  
 Leu Lys Met Ile Val Asn Ala Gly Val Asn Arg Ile Ser Tyr Trp Pro  
 115 120 125  
 Ala Asp Pro Glu Ile Ser Leu Leu Thr Glu Ala Ser Ser Ser Glu Asp  
 130 135 140  
 Ala Lys Leu Asp Ala Lys Ala Val Glu Arg Leu Lys Ser Asn Ser Arg  
 145 150 155 160  
 Ala His Val Cys Val Leu Leu Gln Pro Leu Val Cys Tyr Met Val Gln  
 165 170 175  
 Phe Val Glu Glu Thr Ser Tyr Lys Cys Asp Phe Ile Gln Lys Ile Thr  
 180 185 190  
 Lys Thr Leu Pro Asp Ala Asn Thr Asp Phe Tyr Tyr Glu Cys Lys Gln  
 195 200 205  
 Glu Arg Ile Lys Glu Tyr Glu Met Leu Phe Leu Val Ser Asn Glu Glu  
 210 215 220  
 Met His Lys Gln Ile Leu Met Thr Ile Gly Leu Glu Asn Leu Cys Glu  
 225 230 235 240  
 Asn Pro Tyr Phe Ser Asn Leu Arg Gln Asn Met Lys Asp Leu Ile Leu  
 245 250 255  
 Leu Leu Ala Thr Val Ala Ser Met Cys Arg Leu  
 260 265

&lt;210&gt; 1780

&lt;211&gt; 196

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

<222> (157)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (169)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (171)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (172)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (174)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (179)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (191)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1780  
 Met Tyr Leu Leu Glu Gln Ile Asp Met His Gly Phe Gly Gly Thr Ala  
   1                  5                  10                  15  
 Ala Thr Ser Pro Leu Thr Ala Val Phe Ser Leu Ser Arg Ser Leu Leu  
                   20                  25                  30  
 Ala Ala Ala Leu Leu Tyr Gly Phe Cys Leu Gly Ala Ile Lys Thr Pro  
                   35                  40                  45  
 Trp Pro Glu Gln His Val Pro Val Leu Phe Ser Val Phe Cys Gly Leu  
   50                  55                  60  
 Leu Val Ala Leu Ser Tyr His Leu Ser Arg Gln Ser Ser Asp Pro Thr  
   65                  70                  75                  80  
 Val Leu Trp Ser Leu Ile Arg Ser Lys Leu Phe Pro Glu Leu Glu Glu  
                   85                  90                  95  
 Arg Ser Leu Glu Thr Ala Arg Ala Glu Pro Pro Asp Pro Leu Pro Asp  
                   100                  105                  110  
 Lys Met Arg Gln Ser Val Arg Glu Val Leu His Ser Asp Leu Val Met  
   115                  120                  125  
 Cys Val Val Ile Ala Val Leu Thr Phe Ala Ile Ser Ala Ser Thr Val  
   130                  135                  140

Phe Ile Ala Leu Lys Ser Val Leu Gly Phe Val Leu Xaa Ala Leu Ala  
 145 150 155 160

Gly Gly Arg Gly Leu Leu His Thr Xaa Pro Xaa Xaa Thr Xaa Pro Gln  
 165 170 175

Asn Ser Xaa Pro Gly Ser Ala Cys His Ser Arg Ala Glu Thr Xaa Gly  
 180 185 190

Ile Gln Pro Gly  
 195

<210> 1781  
 <211> 62  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (22)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (52)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1781  
 His Ile Ile Ser Ala His Val Ser Phe Thr Arg Lys Leu Ile Leu Tyr  
 1 5 10 15

Ser Asn Thr Trp Gln Xaa Ala Gly Ser Arg Ala Leu Arg Val Thr Leu  
 20 25 30

Ala Asp Gln Ser Pro Ile Pro Pro Phe Trp Val Val Gly Ser Leu Phe  
 35 40 45

Cys Pro Arg Xaa Ala Glu Ala Ser Glu Ser Leu Ser Val Pro  
 50 55 60

<210> 1782  
 <211> 577  
 <212> PRT  
 <213> Homo sapiens

<400> 1782  
 Met Tyr Leu Leu Glu Gln Ile Asp Met His Gly Phe Gly Gly Thr Ala  
 1 5 10 15

Ala Thr Ser Pro Leu Thr Ala Val Phe Ser Leu Ser Arg Ser Leu Leu  
 20 25 30

Ala Ala Ala Leu Leu Tyr Gly Phe Cys Leu Gly Ala Ile Lys Thr Pro  
 35 40 45



Trp Pro Glu Gln His Val Pro Val Leu Phe Ser Val Phe Cys Gly Leu  
 50 55 60  
 Leu Val Ala Leu Ser Tyr His Leu Ser Arg Gln Ser Ser Asp Pro Thr  
 65 70 75 80  
 Val Leu Trp Ser Leu Ile Arg Ser Lys Leu Phe Pro Glu Leu Glu Glu  
 85 90 95  
 Arg Ser Leu Glu Thr Ala Arg Ala Glu Pro Pro Asp Pro Leu Pro Asp  
 100 105 110  
 Lys Met Arg Gln Ser Val Arg Glu Val Leu His Ser Asp Leu Val Met  
 115 120 125  
 Cys Val Val Ile Ala Val Leu Thr Phe Ala Ile Ser Ala Ser Thr Val  
 130 135 140  
 Phe Ile Ala Leu Lys Ser Val Leu Gly Phe Val Leu Tyr Ala Leu Ala  
 145 150 155 160  
 Gly Ala Val Gly Phe Phe Thr His Tyr Leu Leu Pro Gln Leu Arg Lys  
 165 170 175  
 Gln Leu Pro Trp Phe Cys Leu Ser Gln Pro Val Leu Lys Pro Leu Glu  
 180 185 190  
 Tyr Ser Gln Tyr Glu Val Arg Gly Ala Ala Gln Val Met Trp Phe Glu  
 195 200 205  
 Lys Leu Tyr Ala Gly Leu Gln Cys Val Glu Lys Tyr Leu Ile Tyr Pro  
 210 215 220  
 Ala Val Val Leu Asn Ala Leu Thr Val Asp Ala His Thr Val Val Ser  
 225 230 235 240  
 His Pro Asp Lys Tyr Cys Phe Tyr Cys Arg Ala Leu Leu Met Thr Val  
 245 250 255  
 Ala Gly Leu Lys Leu Leu Arg Ser Ala Phe Cys Cys Pro Pro Gln Gln  
 260 265 270  
 Tyr Leu Thr Leu Ala Phe Thr Val Leu Leu Phe His Phe Asp Tyr Pro  
 275 280 285  
 Arg Leu Ser Gln Gly Phe Leu Leu Asp Tyr Phe Leu Met Ser Leu Leu  
 290 295 300  
 Cys Ser Lys Leu Trp Asp Leu Leu Tyr Lys Leu Arg Phe Val Leu Thr  
 305 310 315 320  
 Tyr Ile Ala Pro Trp Gln Ile Thr Trp Gly Ser Ala Phe His Ala Phe  
 325 330 335  
 Ala Gln Pro Phe Ala Val Pro His Ser Ala Met Leu Phe Val Gln Ala  
 340 345 350  
 Leu Leu Ser Gly Leu Phe Ser Thr Pro Leu Asn Pro Leu Leu Gly Ser  
 355 360 365

Ala Val Phe Ile Met Ser Tyr Ala Arg Pro Leu Lys Phe Trp Glu Arg  
 370 375 380  
 Asp Tyr Asn Thr Lys Arg Val Asp His Ser Asn Thr Arg Leu Val Thr  
 385 390 395 400  
 Gln Leu Asp Arg Asn Pro Gly Ala Asp Asp Asn Asn Leu Asn Ser Ile  
 405 410 415  
 Phe Tyr Glu His Leu Thr Arg Ser Leu Gln His Thr Leu Cys Gly Asp  
 420 425 430  
 Leu Val Leu Gly Arg Trp Gly Asn Tyr Gly Pro Gly Asp Cys Phe Val  
 435 440 445  
 Leu Ala Ser Asp Tyr Leu Asn Ala Leu Val His Leu Ile Glu Val Gly  
 450 455 460  
 Asn Gly Leu Val Thr Phe Gln Leu Arg Gly Leu Glu Phe Arg Gly Thr  
 465 470 475 480  
 Tyr Cys Gln Gln Arg Glu Val Glu Ala Ile Thr Glu Gly Val Glu Glu  
 485 490 495  
 Asp Glu Gly Cys Cys Cys Cys Glu Pro Gly His Leu Pro Arg Val Leu  
 500 505 510  
 Ser Phe Asn Ala Ala Phe Gly Gln Arg Trp Leu Ala Trp Glu Val Thr  
 515 520 525  
 Ala Ser Lys Tyr Val Leu Glu Gly Tyr Ser Ile Ser Asp Asn Asn Ala  
 530 535 540  
 Ala Ser Met Leu Gln Val Phe Asp Leu Arg Lys Ile Leu Ile Thr Tyr  
 545 550 555 560  
 Tyr Val Lys Val Arg Trp Ala Gly Val Ala Gly Gln Gln Gly Pro Cys  
 565 570 575

Gly

<210> 1783

<211> 177

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (145)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (175)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1783

Met Lys Leu Leu Leu Leu His Pro Ala Phe Gln Ser Cys Leu Leu Leu  
 1 5 10 15  
 Thr Leu Leu Gly Leu Trp Arg Thr Thr Pro Glu Ala His Ala Ser Ser  
 20 25 30  
 Pro Gly Ala Pro Ala Ile Ser Ala Ala Ser Phe Leu Gln Asp Leu Ile  
 35 40 45  
 His Arg Tyr Gly Glu Gly Asp Ser Leu Thr Leu Gln Gln Leu Lys Ala  
 50 55 60  
 Leu Leu Asn His Leu Asp Val Gly Val Gly Arg Gly Asn Val Thr Gln  
 65 70 75 80  
 His Val Gln Gly His Arg Asn Leu Ser Thr Cys Phe Ser Ser Gly Asp  
 85 90 95  
 Leu Phe Thr Ala His Asn Phe Ser Glu Gln Ser Arg Ile Gly Ser Ser  
 100 105 110  
 Glu Leu Gln Glu Phe Cys Pro Thr Ile Leu Gln Gln Leu Asp Ser Arg  
 115 120 125  
 Ala Cys Thr Ser Glu Asn Gln Glu Asn Glu Glu Asn Glu Gln Thr Glu  
 130 135 140  
 Xaa Gly Arg Pro Ser Ala Val Glu Val Trp Gly Tyr Gly Leu Leu Cys  
 145 150 155 160  
 Val Thr Val Ser Pro Ser Ala Pro Ser Trp Gly Pro Ala Trp Xaa Pro  
 165 170 175

Ser

<210> 1784

<211> 492

<212> PRT

<213> Homo sapiens

<400> 1784

Met Lys Leu Leu Leu Leu His Pro Ala Phe Gln Ser Cys Leu Leu Leu  
 1 5 10 15  
 Thr Leu Leu Gly Leu Trp Arg Thr Thr Pro Glu Ala His Ala Ser Ser  
 20 25 30  
 Pro Gly Ala Pro Ala Ile Ser Ala Ala Ser Phe Leu Gln Asp Leu Ile  
 35 40 45  
 His Arg Tyr Gly Glu Gly Asp Ser Leu Thr Leu Gln Gln Leu Lys Ala  
 50 55 60  
 Leu Leu Asn His Leu Asp Val Gly Val Gly Arg Gly Asn Val Thr Gln  
 65 70 75 80  
 His Val Gln Gly His Arg Asn Leu Ser Thr Cys Phe Ser Ser Gly Asp

85										90					95				
Leu	Phe	Thr	Ala	His	Asn	Phe	Ser	Glu	Gln	Ser	Arg	Ile	Gly	Ser	Ser				
			100					105					110						
Glu	Leu	Gln	Glu	Phe	Cys	Pro	Thr	Ile	Leu	Gln	Gln	Leu	Asp	Ser	Arg				
		115					120					125							
Ala	Cys	Thr	Ser	Glu	Asn	Gln	Glu	Asn	Glu	Glu	Asn	Glu	Gln	Thr	Glu				
	130					135					140								
Glu	Gly	Arg	Pro	Ser	Ala	Val	Glu	Val	Trp	Gly	Tyr	Gly	Leu	Leu	Cys				
145					150					155					160				
Val	Thr	Val	Ile	Ser	Leu	Cys	Ser	Leu	Leu	Gly	Ala	Ser	Val	Val	Pro				
				165					170					175					
Phe	Met	Lys	Lys	Thr	Phe	Tyr	Lys	Arg	Leu	Leu	Leu	Tyr	Phe	Ile	Ala				
			180					185					190						
Leu	Ala	Ile	Gly	Thr	Leu	Tyr	Ser	Asn	Ala	Leu	Phe	Gln	Leu	Ile	Pro				
	195						200					205							
Glu	Ala	Phe	Gly	Phe	Asn	Pro	Leu	Glu	Asp	Tyr	Tyr	Val	Ser	Lys	Ser				
	210					215					220								
Ala	Val	Val	Phe	Gly	Gly	Phe	Tyr	Leu	Phe	Phe	Phe	Thr	Glu	Lys	Ile				
225					230					235					240				
Leu	Lys	Ile	Leu	Leu	Lys	Gln	Lys	Asn	Glu	His	His	His	Gly	His	Ser				
			245						250					255					
His	Tyr	Ala	Ser	Glu	Ser	Leu	Pro	Ser	Lys	Lys	Asp	Gln	Glu	Glu	Gly				
		260						265					270						
Val	Met	Glu	Lys	Leu	Gln	Asn	Gly	Asp	Leu	Asp	His	Met	Ile	Pro	Gln				
	275						280					285							
His	Cys	Ser	Ser	Glu	Leu	Asp	Gly	Lys	Ala	Pro	Met	Val	Asp	Glu	Lys				
	290					295					300								
Val	Ile	Val	Gly	Ser	Leu	Ser	Val	Gln	Asp	Leu	Gln	Ala	Ser	Gln	Ser				
305					310					315					320				
Ala	Cys	Tyr	Trp	Leu	Lys	Gly	Val	Arg	Tyr	Ser	Asp	Ile	Gly	Thr	Leu				
				325					330					335					
Ala	Trp	Met	Ile	Thr	Leu	Ser	Asp	Gly	Leu	His	Asn	Phe	Ile	Asp	Gly				
		340						345					350						
Leu	Ala	Ile	Gly	Ala	Ser	Phe	Thr	Val	Ser	Val	Phe	Gln	Gly	Ile	Ser				
	355						360					365							
Thr	Ser	Val	Ala	Ile	Leu	Cys	Glu	Glu	Phe	Pro	His	Glu	Leu	Gly	Asp				
	370					375					380								
Phe	Val	Ile	Leu	Leu	Asn	Ala	Gly	Met	Ser	Ile	Gln	Gln	Ala	Leu	Phe				
385					390					395					400				
Phe	Asn	Phe	Leu	Ser	Ala	Cys	Cys	Cys	Tyr	Leu	Gly	Leu	Ala	Phe	Gly				

405 410 415  
 Ile Leu Ala Gly Ser His Phe Ser Ala Asn Trp Ile Phe Ala Leu Ala  
 420 425 430  
 Gly Gly Met Phe Leu Tyr Ile Ser Leu Ala Asp Met Phe Pro Glu Met  
 435 440 445  
 Asn Glu Val Cys Gln Glu Asp Glu Arg Lys Gly Ser Ile Leu Ile Pro  
 450 455 460  
 Phe Ile Ile Gln Asn Leu Gly Leu Leu Thr Gly Phe Thr Ile Met Val  
 465 470 475 480  
 Val Leu Thr Met Tyr Ser Gly Gln Ile Gln Ile Gly  
 485 490

&lt;210&gt; 1785

&lt;211&gt; 192

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1785

Met Gly Lys Ile Ser Val Ser Phe Leu Ile Phe Ala Phe Leu Phe Lys  
 1 5 10 15  
 Gly Phe Ser Ile Gly Lys Ala Thr Asp Arg Met Asp Ala Phe Arg Lys  
 20 25 30  
 Ala Lys Asn Arg Ala Val His His Leu His Tyr Ile Glu Arg Tyr Glu  
 35 40 45  
 Asp His Thr Ile Phe His Asp Ile Ser Leu Arg Phe Lys Arg Thr His  
 50 55 60  
 Ile Lys Met Lys Lys Gln Pro Lys Gly Tyr Gly Leu Arg Cys His Arg  
 65 70 75 80  
 Ala Ile Ile Thr Ile Cys Arg Leu Ile Gly Ile Lys Asp Met Tyr Ala  
 85 90 95  
 Lys Val Ser Gly Ser Ile Asn Met Leu Ser Leu Thr Gln Gly Leu Phe  
 100 105 110  
 Arg Gly Leu Ser Arg Gln Glu Thr His Gln Gln Leu Ala Asp Lys Lys  
 115 120 125  
 Gly Leu His Val Val Glu Ile Arg Glu Glu Cys Gly Pro Leu Pro Ile  
 130 135 140  
 Val Val Ala Ser Pro Arg Gly Pro Leu Arg Lys Asp Pro Glu Pro Glu  
 145 150 155 160  
 Asp Glu Val Pro Asp Val Lys Leu Asp Trp Glu Asp Val Lys Thr Ala  
 165 170 175  
 Gln Gly Met Lys Arg Ser Val Trp Ser Asn Leu Lys Arg Ala Ala Thr  
 180 185 190

<210> 1786  
 <211> 192  
 <212> PRT  
 <213> Homo sapiens

<400> 1786

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Met Gly Lys Ile Ser Val Ser Phe Leu Ile Phe Ala Phe Leu Phe Lys
  1           5           10           15

Gly Phe Ser Ile Gly Lys Ala Thr Asp Arg Met Asp Ala Phe Arg Lys
          20           25           30

Ala Lys Asn Arg Ala Val His His Leu His Tyr Ile Glu Arg Tyr Glu
          35           40           45

Asp His Thr Ile Phe His Asp Ile Ser Leu Arg Phe Lys Arg Thr His
          50           55           60

Ile Lys Met Lys Lys Gln Pro Lys Gly Tyr Gly Leu Arg Cys His Arg
          65           70           75           80

Ala Ile Ile Thr Ile Cys Arg Leu Ile Gly Ile Lys Asp Met Tyr Ala
          85           90           95

Lys Val Ser Gly Ser Ile Asn Met Leu Ser Leu Thr Gln Gly Leu Phe
          100          105          110

Arg Gly Leu Ser Arg Gln Glu Thr His Gln Gln Leu Ala Asp Lys Lys
          115          120          125

Gly Leu His Val Val Glu Ile Arg Glu Glu Cys Gly Pro Leu Pro Ile
          130          135          140

Val Val Ala Ser Pro Arg Gly Pro Leu Arg Lys Asp Pro Glu Pro Glu
          145          150          155          160

Asp Glu Val Pro Asp Val Lys Leu Asp Trp Glu Asp Val Lys Thr Ala
          165          170          175

Gln Gly Met Lys Arg Ser Val Trp Ser Asn Leu Lys Arg Ala Ala Thr
          180          185          190

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<210> 1787  
 <211> 167  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE

&lt;222&gt; (25)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (150)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1787

Met Ile Gly Pro His Gly Tyr Ile Ser Ala Ser Asp Trp Pro Leu Met  
 1 5 10 15

Ile Phe Tyr Met Val Met Cys Ile Xaa Tyr Ile Leu Tyr Gly Ile Leu  
 20 25 30

Trp Leu Thr Trp Ser Ala Cys Tyr Trp Lys Asp Ile Leu Arg Ile Gln  
 35 40 45

Phe Trp Ile Ala Ala Val Ile Phe Leu Gly Met Leu Glu Lys Ala Val  
 50 55 60

Phe Tyr Ser Glu Tyr Gln Asn Ile Ser Asn Thr Gly Leu Ser Thr Gln  
 65 70 75 80

Gly Leu Leu Ile Phe Ala Glu Leu Ile Ser Ala Ile Lys Arg Thr Leu  
 85 90 95

Ala Arg Leu Leu Val Ile Ile Val Ser Leu Gly Tyr Gly Ile Val Lys  
 100 105 110

Pro Arg Leu Gly Thr Val Met His Arg Val Ile Gly Leu Gly Leu Leu  
 115 120 125

Tyr Leu Ile Phe Ala Ala Val Glu Gly Val Met Arg Val Ile Gly Gly  
 130 135 140

Ser Asn His Leu Ala Xaa Gly Leu Asp Asp Ile Ile Leu Ala Val Ile  
 145 150 155 160

Asp Ser Ile Phe Val Trp Val  
 165

&lt;210&gt; 1788

&lt;211&gt; 167

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1788

Met Ile Gly Pro His Gly Tyr Ile Ser Ala Ser Asp Trp Pro Leu Met  
 1 5 10 15

Ile Phe Tyr Met Val Met Cys Ile Val Tyr Ile Leu Tyr Gly Ile Leu  
 20 25 30

Trp Leu Thr Trp Ser Ala Cys Tyr Trp Lys Asp Ile Leu Arg Ile Gln  
 35 40 45

Phe Trp Ile Ala Ala Val Ile Phe Leu Gly Met Leu Glu Lys Ala Val

50                                      55                                      60  
 Phe Tyr Ser Glu Tyr Gln Asn Ile Ser Asn Thr Gly Leu Ser Thr Gln  
 65                                      70                                      75                                      80  
 Gly Leu Leu Ile Phe Ala Glu Leu Ile Ser Ala Ile Lys Arg Thr Leu  
                                     85                                      90                                      95  
 Ala Arg Leu Leu Val Ile Ile Val Ser Leu Gly Tyr Gly Ile Val Lys  
                                     100                                      105                                      110  
 Pro Arg Leu Gly Thr Val Met His Arg Val Ile Gly Leu Gly Leu Leu  
                                     115                                      120                                      125  
 Tyr Leu Ile Phe Ala Ala Val Glu Gly Val Met Arg Val Ile Gly Gly  
                                     130                                      135                                      140  
 Ser Asn His Leu Ala Val Val Leu Asp Asp Ile Ile Leu Ala Val Ile  
 145                                      150                                      155                                      160  
 Asp Ser Ile Phe Val Trp Phe  
                                     165

<210> 1789  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<400> 1789  
 Met Val His Tyr Ser Trp Cys Ala Leu Phe Cys His Phe Ala Gln Gly  
 1                                      5                                      10                                      15  
 Thr Cys Leu Gln Asn Ser Phe Gln Ser Gly Leu Val Lys Gly Cys Gln  
                                     20                                      25                                      30  
 Gly Ser Thr Gly Gly Asn Gln Gly Ser Phe Gln Ala Ala Lys Met Ser  
                                     35                                      40                                      45  
 Pro Val Cys Tyr Ser Gly His Thr Gly Trp Leu Ser Arg Pro Trp Ala  
                                     50                                      55                                      60  
 Lys Ser Ile Ser Gln Ser Ala Asp Asp Arg Ser Pro Pro Ser Arg Arg  
 65                                      70                                      75                                      80  
 Thr

<210> 1790  
 <211> 81  
 <212> PRT  
 <213> Homo sapiens

<400> 1790  
 Met Val His Tyr Ser Trp Cys Ala Leu Phe Cys His Phe Ala Gln Gly  
 1                                      5                                      10                                      15



Thr Cys Leu Gln Asn Ser Phe Gln Ser Gly Leu Val Lys Gly Cys Gln  
                   20                  25                  30  
 Gly Ser Thr Gly Gly Asn Gln Gly Ser Phe Gln Ala Ala Lys Met Ser  
                   35                  40                  45  
 Pro Val Cys Tyr Ser Gly His Thr Gly Trp Leu Ser Arg Pro Trp Ala  
                   50                  55                  60  
 Lys Ser Ile Ser Gln Ser Ala Asp Asp Arg Ser Pro Pro Ser Arg Arg  
                   65                  70                  75                  80  
 Thr

&lt;210&gt; 1791

&lt;211&gt; 183

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (75)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (125)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1791

Met Ala Leu Ala Arg Pro Gly Thr Pro Asp Pro Gln Ala Leu Ala Ser  
   1                  5                  10                  15

Val Leu Leu Leu Leu Leu Trp Ala Pro Ala Leu Ser Leu Leu Ala Gly  
                   20                  25                  30

Thr Val Pro Ser Glu Pro Pro Ser Ala Cys Ala Ser Asp Pro Cys Ala  
                   35                  40                  45

Pro Gly Thr Glu Cys Gln Ala Thr Glu Ser Gly Gly Tyr Thr Cys Gly  
                   50                  55                  60

Pro Met Glu Pro Arg Gly Cys Ala Thr Gln Xaa Cys His His Gly Ala  
                   65                  70                  75                  80

Leu Cys Val Pro Gln Gly Pro Asp Pro Asn Gly Phe Arg Cys Tyr Cys  
                   85                  90                  95

Val Pro Gly Phe Gln Gly Pro Arg Cys Glu Leu Asp Ile Asp Glu Cys  
                   100                  105                  110

Ala Ser Arg Pro Cys His His Gly Ala Thr Leu Pro Xaa Pro Gly Arg  
                   115                  120                  125

Ser Leu Arg Val Pro Leu Pro Leu Gly Tyr Ala Ala Pro His Leu Asn  
                   130                  135                  140

Pro Leu Ser Tyr Val Trp Gly Ile Pro His Leu Met Arg Gln Arg Leu  
 145 150 155 160

Pro Pro Asp Gly Asp Ser Lys Ala Asn Asp Ser Lys Lys Leu Gly Pro  
 165 170 175

Gln Lys Ile Tyr Ser Gly Lys  
 180

<210> 1792

<211> 103

<212> PRT

<213> Homo sapiens

<400> 1792

Met Cys Phe Leu Leu Phe Gly Ser Leu Cys Ile Tyr Tyr Phe Ser Leu  
 1 5 10 15

Phe Leu Val Phe Phe Phe Phe Leu Phe Leu Phe Cys Leu Val Phe Cys  
 20 25 30

Ser Cys Leu His Cys Phe Arg Tyr Phe Phe Thr Pro Leu Asp Ser Pro  
 35 40 45

Arg Ala Gly Ser Arg Trp Ser Ser Tyr Ala Gln Leu Leu Pro Pro Pro  
 50 55 60

Pro Pro Pro Leu Val Glu His Ser Cys Asp Ala Asp Thr Ala Asn Leu  
 65 70 75 80

Gln Tyr Pro His Pro Arg Arg Arg Tyr Leu Ser Arg Pro Leu Asn Pro  
 85 90 95

Leu Pro Glu Asn Glu Gly Ile  
 100

<210> 1793

<211> 103

<212> PRT

<213> Homo sapiens

<400> 1793

Met Cys Phe Leu Leu Phe Gly Ser Leu Cys Ile Tyr Tyr Phe Ser Leu  
 1 5 10 15

Phe Leu Val Phe Phe Phe Phe Leu Phe Leu Phe Cys Leu Val Phe Cys  
 20 25 30

Ser Cys Leu His Cys Phe Arg Tyr Phe Phe Thr Pro Leu Asp Ser Pro  
 35 40 45

Arg Ala Gly Ser Arg Trp Ser Ser Tyr Ala Gln Leu Leu Pro Pro Pro  
 50 55 60

Pro Pro Pro Leu Val Glu His Ser Cys Asp Ala Asp Thr Ala Asn Leu  
 65 70 75 80

Gln Tyr Pro His Pro Arg Arg Arg Tyr Leu Ser Arg Pro Leu Asn Pro  
                                   85                                  90                                  95

Leu Pro Glu Asn Glu Gly Ile  
                                   100

<210> 1794

<211> 84

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (77)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1794

Met Gly His Gly Arg Arg Leu Gly Arg His Leu Leu Ala Leu Pro Val  
   1                                  5                                  10                                  15

Thr Leu Ser Glu Arg Cys Leu Gly Ser Pro Val Glu Asn Glu Thr His  
                                   20                                  25                                  30

Ser Arg Asp Gly Thr Glu Leu Pro Asp Gly Ser Arg Glu Pro Ser Ser  
                                   35                                  40                                  45

Pro Arg Arg Val Ser Glu Ser Arg Val Thr Pro Ala Arg Thr Glu Glu  
                                   50                                  55                                  60

Pro Pro Ala Glu Pro Ser Leu Thr Pro Asp Leu Arg Xaa Asp Asn Ser  
   65                                  70                                  75                                  80

Arg Gly Ser Leu

<210> 1795

<211> 84

<212> PRT

<213> Homo sapiens

<400> 1795

Met Gly His Gly Arg Arg Leu Gly Arg His Leu Leu Ala Leu Pro Val  
   1                                  5                                  10                                  15

Thr Leu Ser Glu Arg Cys Leu Gly Ser Pro Val Glu Asn Glu Thr His  
                                   20                                  25                                  30

Ser Arg Asp Gly Thr Glu Leu Pro Asp Gly Ser Arg Glu Pro Ser Ser  
                                   35                                  40                                  45

Pro Arg Arg Val Ser Glu Ser Arg Val Thr Pro Ala Arg Thr Glu Glu  
                                   50                                  55                                  60

Pro Pro Ala Glu Pro Ser Leu Thr Pro Asp Leu Arg Leu Asp Asn Ser  
   65                                  70                                  75                                  80

Arg Gly Ser Leu

&lt;210&gt; 1796

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1796

Met Gly Ser Gly Cys Pro Ala Gln Pro Thr Leu Ser Pro Trp Gly Ile  
 1 5 10 15

Leu Ser Arg Leu Leu Gly Val Leu Ala Gly Thr Ser Cys Gly Val Ser  
 20 25 30

Thr Pro Ala Ala Ala Gln Gly Gly Pro Glu Ile Gly Cys Arg Ala Pro  
 35 40 45

His Leu His Leu Ser Gly His Ala Pro Leu Ala Cys Pro Cys Ser Phe  
 50 55 60

Leu Pro Thr Ser Leu Gly Gly Val Cys Val Ser Ala Pro Ala Pro Ala  
 65 70 75 80

Leu Leu Ser Trp Gly Thr Leu Pro Ala Ile Trp Tyr Trp Gly Cys Pro  
 85 90 95

His Cys Leu Val Leu Gly Pro Gly Pro Ala His Ser Gly Leu Ala Leu  
 100 105 110

Leu Val Cys Ser  
 115

&lt;210&gt; 1797

&lt;211&gt; 171

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1797

Gly Pro Trp Pro Leu Cys Lys Ala Gln Arg Cys Ala Pro Asp Gln Pro  
 1 5 10 15

Ser Gly Leu Pro Trp Ala Arg Leu Gly Val Arg Val Ala His Trp Gly  
 20 25 30

Gly Gly Gly Leu Ala Arg His Ser Thr Leu Ala Gly Gly Pro Ser Gln  
 35 40 45

Arg Glu Pro Cys Arg Leu Arg Trp Ser Trp Pro Leu Ala Gly Cys Pro  
 50 55 60

Gly Ser Ala Pro Pro Leu Gln Gly Pro Ser Arg Asn Leu Leu Leu Asn  
 65 70 75 80

Gly Lys Ser Tyr Pro Thr Lys Val Arg Leu Ile Arg Gly Gly Ser Leu  
 1150

					85					90					95
Pro	Pro	Val	Lys	Arg	Arg	Arg	Met	Asn	Trp	Ile	Asp	Ala	Pro	Asp	Asp
			100					105					110		
Val	Phe	Tyr	Met	Ala	Thr	Glu	Glu	Thr	Arg	Lys	Ile	Arg	Lys	Leu	Leu
		115					120					125			
Ser	Ser	Ser	Glu	Thr	Lys	Arg	Ala	Ala	Arg	Arg	Pro	Tyr	Lys	Pro	Ile
		130				135					140				
Ala	Leu	Arg	Gln	Ser	Gln	Ala	Leu	Pro	Pro	Arg	Pro	Pro	Pro	Pro	Ala
145					150					155					160
Pro	Val	Asn	Asp	Glu	Pro	Ile	Val	Ile	Glu	Asp					
				165					170						

&lt;210&gt; 1798

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1798

Met	Leu	Tyr	Pro	Arg	Ile	Phe	Thr	Asn	Arg	Gly	Glu	Leu	Leu	Pro	Phe
1				5					10					15	
Leu	Phe	Leu	Thr	Val	Trp	Leu	Trp	Leu	Tyr	Lys	Leu	Leu	Phe	Gly	Glu
			20					25					30		
Ser	Pro	Arg	Tyr	Pro	Asn	Val	Ile	Gly	Lys	Thr	Tyr	Phe	Phe	Phe	Trp
		35					40					45			
Thr	Asp	Gln	Ile	Ser	Arg	Glu	Ser	Arg	Phe	Leu	Glu	Arg	Leu	Ala	Phe
	50					55					60				
Ile	Val	Ser	Glu	Asn	Cys	Leu	Ile	Phe	Leu	Ile	His	Ala	Ile	Thr	Gly
65					70					75					80
Gln															

&lt;210&gt; 1799

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1799

Met	Leu	Tyr	Pro	Arg	Ile	Phe	Thr	Asn	Arg	Gly	Glu	Leu	Leu	Pro	Phe
1				5					10					15	
Leu	Phe	Leu	Thr	Val	Trp	Leu	Trp	Leu	Tyr	Lys	Leu	Leu	Phe	Gly	Glu
			20					25					30		
Ser	Pro	Arg	Tyr	Pro	Asn	Val	Ile	Gly	Lys	Thr	Tyr	Phe	Phe	Phe	Trp
		35					40					45			

Thr Asp Gln Ile Ser Arg Glu Ser Arg Phe Leu Glu Arg Leu Ala Phe  
 50 55 60

Ile Val Ser Glu Asn Cys Leu Ile Phe Leu Ile His Ala Ile Thr Gly  
 65 70 75 80

Gln

<210> 1800

<211> 149

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (140)

<223> Xaa equals any of the naturally occurring L-amino acids .

<400> 1800

Met Val Leu Leu Trp Ala Ser Val Leu Phe Pro Ala Pro Glu Asp Trp  
 1 5 10 15

Ala Glu Leu Gln Gly Ala Val Tyr Arg Leu Leu Val Val Leu Leu Cys  
 20 25 30

Cys Leu Ala Thr Arg Lys Leu Pro His Phe Leu His Pro Gln Arg Asn  
 35 40 45

Leu Leu Gln Gly Ser Gly Leu Asp Leu Gly Ala Ile Tyr Gln Arg Val  
 50 55 60

Glu Gly Phe Ala Ser Gln Pro Glu Ala Ala Leu Arg Ile His Ala Thr  
 65 70 75 80

His Leu Gly Arg Ser Pro Pro Pro Arg Ile Gly Ser Gly Leu Lys Ala  
 85 90 95

Leu Leu Gln Leu Pro Ala Ser Asp Pro Thr Tyr Trp Ala Thr Ala Tyr  
 100 105 110

Phe Asp Val Leu Leu Asp Lys Phe Gln Val Phe Asn Ile Gln Asp Lys  
 115 120 125

Asp Arg Ile Ser Ala Met Gln Ser Ile Phe Gln Xaa Thr Arg Thr Leu  
 130 135 140

Gly Gly Glu Glu Ser  
 145

<210> 1801

<211> 149

<212> PRT

<213> Homo sapiens

<400> 1801 .

Met Val Leu Leu Trp Ala Ser Val Leu Phe Pro Ala Pro Glu Asp Trp  
 1 5 10 15  
 Ala Glu Leu Gln Gly Ala Val Tyr Arg Leu Leu Val Val Leu Leu Cys  
 20 25 30  
 Cys Leu Ala Thr Arg Lys Leu Pro His Phe Leu His Pro Gln Arg Asn  
 35 40 45  
 Leu Leu Gln Gly Ser Gly Leu Asp Leu Gly Ala Ile Tyr Gln Arg Val  
 50 55 60  
 Glu Gly Phe Ala Ser Gln Pro Glu Ala Ala Leu Arg Ile His Ala Thr  
 65 70 75 80  
 His Leu Gly Arg Ser Pro Pro Pro Arg Ile Gly Ser Gly Leu Lys Ala  
 85 90 95  
 Leu Leu Gln Leu Pro Ala Ser Asp Pro Thr Tyr Trp Ala Thr Ala Tyr  
 100 105 110  
 Phe Asp Val Leu Leu Asp Lys Phe Gln Val Phe Asn Ile Gln Asp Lys  
 115 120 125  
 Asp Arg Ile Ser Ala Met Gln Ser Ile Phe Gln Lys Thr Arg Thr Leu  
 130 135 140  
 Gly Gly Glu Glu Ser  
 145

&lt;210&gt; 1802

&lt;211&gt; 140

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1802

Ile Pro Leu Cys Ser Ile Phe Gly Ala Leu Ile Ala Val Cys Leu Ile  
 1 5 10 15  
 Met Gly Leu Phe Asp Gly Cys Phe Ile Ser Ile Met Ala Pro Ile Ala  
 20 25 30  
 Phe Glu Leu Val Gly Ala Gln Asp Val Ser Gln Ala Ile Gly Phe Leu  
 35 40 45  
 Leu Gly Phe Met Ser Ile Pro Met Thr Val Gly Pro Pro Ile Ala Gly  
 50 55 60  
 Leu Leu Arg Asp Lys Leu Gly Ser Tyr Asp Val Ala Phe Tyr Leu Ala  
 65 70 75 80  
 Gly Val Pro Pro Leu Ile Gly Gly Ala Val Leu Cys Phe Ile Pro Trp  
 85 90 95  
 Ile His Ser Lys Lys Gln Arg Glu Ile Ser Lys Thr Thr Gly Lys Glu  
 100 105 110  
 Lys Met Glu Lys Met Leu Glu Asn Gln Asn Ser Leu Leu Ser Ser Ser

115                                      120                                      125  
 Ser Gly Met Phe Lys Lys Glu Ser Asp Ser Ile Ile  
 130                                      135                                      140  
  
 <210> 1803  
 <211> 234  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 1803  
 Pro Thr Arg Pro Pro Thr Arg Pro Val Arg Val Ser Val Gly Gly Leu  
 1                                      5                                      10                                      15  
 Val Gly Glu Val Ala Cys Ala Cys Arg Asp Cys Ile Pro Glu Thr Met  
 20                                      25                                      30  
 Ala Glu Gly Asp Asn Arg Ser Thr Asn Leu Leu Ala Ala Glu Thr Ala  
 35                                      40                                      45  
 Ser Leu Glu Glu Gln Leu Gln Gly Trp Gly Glu Val Met Leu Met Ala  
 50                                      55                                      60  
 Asp Lys Val Leu Arg Trp Glu Arg Ala Trp Phe Pro Pro Ala Ile Met  
 65                                      70                                      75                                      80  
 Gly Val Val Ser Leu Val Phe Leu Ile Ile Tyr Tyr Leu Asp Pro Ser  
 85                                      90                                      95  
 Val Leu Ser Gly Val Ser Cys Phe Val Met Phe Leu Cys Leu Ala Asp  
 100                                      105                                      110  
 Tyr Leu Val Pro Ile Leu Ala Pro Arg Ile Phe Gly Ser Asn Lys Trp  
 115                                      120                                      125  
 Thr Thr Glu Gln Gln Gln Arg Phe His Glu Ile Cys Ser Asn Leu Val  
 130                                      135                                      140  
 Lys Thr Arg Arg Arg Ala Val Gly Trp Trp Lys Arg Leu Phe Thr Leu  
 145                                      150                                      155                                      160  
 Lys Glu Glu Lys Pro Lys Met Tyr Phe Met Thr Met Ile Val Ser Leu  
 165                                      170                                      175  
 Ala Ala Val Ala Trp Val Gly Gln Gln Val His Asn Leu Leu Leu Thr  
 180                                      185                                      190  
 Tyr Leu Ile Val Thr Ser Leu Leu Leu Leu Pro Gly Leu Asn Gln His  
 195                                      200                                      205  
 Gly Ile Ile Leu Lys Tyr Ile Gly Met Ala Lys Arg Glu Ile Asn Lys  
 210                                      215                                      220  
 Leu Leu Lys Gln Lys Glu Lys Lys Asn Glu  
 225                                      230



&lt;210&gt; 1804

&lt;211&gt; 155

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1804

```

Met Gly Val Val Ser Leu Val Phe Leu Ile Ile Tyr Tyr Leu Asp Pro
 1                               10                          15

Ser Val Leu Ser Gly Val Ser Cys Phe Val Met Phe Leu Cys Leu Ala
      20                      25                      30

Asp Tyr Leu Val Pro Ile Leu Ala Pro Arg Ile Phe Gly Ser Asn Lys
      35                      40                      45

Trp Thr Thr Glu Gln Gln Gln Arg Phe His Glu Ile Cys Ser Asn Leu
 50                      55                      60

Val Lys Thr Arg Arg Arg Ala Val Gly Trp Trp Lys Arg Leu Phe Thr
 65                      70                      75                      80

Leu Lys Glu Glu Lys Pro Lys Met Tyr Phe Met Thr Met Ile Val Ser
      85                      90                      95

Leu Ala Ala Val Ala Trp Val Gly Gln Gln Val His Asn Leu Leu Leu
      100                      105                      110

Thr Tyr Leu Ile Val Thr Ser Leu Leu Leu Leu Pro Gly Leu Asn Gln
      115                      120                      125

His Gly Ile Ile Leu Lys Tyr Ile Gly Met Ala Lys Arg Glu Ile Asn
      130                      135                      140

Lys Leu Leu Lys Gln Lys Glu Lys Lys Asn Glu
      145                      150                      155

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&lt;210&gt; 1805

&lt;211&gt; 202

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1805

```

Met Ala Glu Gly Asp Asn Arg Ser Thr Asn Leu Leu Ala Ala Glu Thr
 1                               10                          15

Ala Ser Leu Glu Glu Gln Leu Gln Gly Trp Gly Glu Val Met Leu Met
      20                      25                      30

Ala Asp Lys Val Leu Arg Trp Glu Arg Ala Trp Phe Pro Pro Ala Ile
      35                      40                      45

Met Gly Val Val Ser Leu Val Phe Leu Ile Ile Tyr Tyr Leu Asp Pro
 50                      55                      60

Ser Val Leu Ser Gly Val Ser Cys Phe Val Met Phe Leu Cys Leu Ala
 65                      70                      75                      80

Asp Tyr Leu Val Pro Ile Leu Ala Pro Arg Ile Phe Gly Ser Asn Lys

```

	85		90		95
Trp Thr Thr	Glu Gln Gln Gln Arg	Phe His Glu Ile Cys Ser Asn Leu			
	100	105		110	
Val Lys Thr Arg Arg Arg Ala Val Gly Trp Trp Lys Arg Leu Phe Thr					
	115	120		125	
Leu Lys Glu Glu Lys Pro Lys Met Tyr Phe Met Thr Met Ile Val Ser					
	130	135		140	
Leu Ala Ala Val Ala Trp Val Gly Gln Gln Val His Asn Leu Leu Leu					
145	150		155		160
Thr Tyr Leu Ile Val Thr Ser Leu Leu Leu Leu Pro Gly Leu Asn Gln					
	165		170		175
His Gly Ile Ile Leu Lys Tyr Ile Gly Met Ala Lys Arg Glu Ile Asn					
	180		185		190
Lys Leu Leu Lys Gln Lys Lys Lys Lys Lys					
	195		200		

&lt;210&gt; 1806

&lt;211&gt; 485

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1806

Ala Arg Lys Pro Arg Ser Gln Ile Lys Asn Glu Ile Asn Ile Asp Thr					
1	5		10		15
Leu Ala Arg Asp Glu Phe Asn Leu Gln Lys Met Met Val Met Val Thr					
	20		25		30
Ala Ser Gly Lys Leu Phe Gly Ile Glu Ser Ser Ser Gly Thr Ile Leu					
	35		40		45
Trp Lys Gln Tyr Leu Pro Asn Val Lys Pro Asp Ser Ser Phe Lys Leu					
	50		55		60
Met Val Gln Arg Thr Thr Ala His Phe Pro His Pro Pro Gln Cys Thr					
	65		70		75
Leu Leu Val Lys Asp Lys Glu Ser Gly Met Ser Ser Leu Tyr Val Phe					
	85		90		95
Asn Pro Ile Phe Gly Lys Trp Ser Gln Val Ala Pro Pro Val Leu Lys					
	100		105		110
Arg Pro Ile Leu Gln Ser Leu Leu Leu Pro Val Met Asp Gln Asp Tyr					
	115		120		125
Ala Lys Val Leu Leu Leu Ile Asp Asp Glu Tyr Lys Val Thr Ala Phe					
	130		135		140
Pro Ala Thr Arg Asn Val Leu Arg Gln Leu His Glu Leu Ala Pro Ser					
145	150		155		160

Ile Phe Phe Tyr Leu Val Asp Ala Glu Gln Gly Arg Leu Cys Gly Tyr  
 165 170 175  
 Arg Leu Arg Lys Asp Leu Thr Thr Glu Leu Ser Trp Glu Leu Thr Ile  
 180 185 190  
 Pro Pro Glu Val Gln Arg Ile Val Lys Val Lys Gly Lys Arg Ser Ser  
 195 200 205  
 Glu His Val His Ser Gln Gly Arg Val Met Gly Asp Arg Ser Val Leu  
 210 215 220  
 Tyr Lys Ser Leu Asn Pro Asn Leu Leu Ala Val Val Thr Glu Ser Thr  
 225 230 235 240  
 Asp Ala His His Glu Arg Thr Phe Ile Gly Ile Phe Leu Ile Asp Gly  
 245 250 255  
 Val Thr Gly Arg Ile Ile His Ser Ser Val Gln Lys Lys Ala Lys Gly  
 260 265 270  
 Pro Val His Ile Val His Ser Glu Asn Trp Val Val Tyr Gln Tyr Trp  
 275 280 285  
 Asn Thr Lys Ala Arg Arg Asn Glu Phe Thr Val Leu Glu Leu Tyr Glu  
 290 295 300  
 Gly Thr Glu Gln Tyr Asn Ala Thr Ala Phe Ser Ser Leu Asp Arg Pro  
 305 310 315 320  
 Gln Leu Pro Gln Val Leu Gln Gln Ser Tyr Ile Phe Pro Ser Ser Ile  
 325 330 335  
 Ser Ala Met Glu Ala Thr Ile Thr Glu Arg Gly Ile Thr Ser Arg His  
 340 345 350  
 Leu Leu Ile Gly Leu Pro Ser Gly Ala Ile Leu Ser Leu Pro Lys Ala  
 355 360 365  
 Leu Leu Asp Pro Arg Arg Pro Glu Ile Pro Thr Glu Gln Ser Arg Glu  
 370 375 380  
 Glu Asn Leu Ile Pro Tyr Ser Pro Asp Val Gln Ile His Ala Glu Arg  
 385 390 395 400  
 Phe Ile Asn Tyr Asn Gln Thr Val Ser Arg Met Arg Gly Ile Tyr Thr  
 405 410 415  
 Ala Pro Ser Gly Leu Glu Ser Thr Cys Leu Val Val Ala Tyr Gly Leu  
 420 425 430  
 Asp Ile Tyr Gln Thr Arg Val Tyr Pro Ser Lys Gln Phe Asp Val Leu  
 435 440 445  
 Lys Asp Asp Tyr Asp Tyr Val Leu Ile Ser Ser Val Leu Phe Gly Leu  
 450 455 460  
 Val Phe Ala Thr Met Ile Thr Lys Arg Leu Ala Gln Val Lys Leu Leu  
 465 470 475 480

Asn Arg Ala Trp Arg  
485

<210> 1807

<211> 360

<212> PRT

<213> Homo sapiens

<400> 1807

Met Ala Ala Glu Trp Ala Ser Arg Phe Trp Leu Trp Ala Thr Leu Leu  
1 5 10 15

Ile Pro Ala Ala Ala Val Tyr Glu Asp Gln Val Gly Lys Phe Asp Trp  
20 25 30

Arg Gln Gln Tyr Val Gly Lys Val Lys Phe Ala Ser Leu Glu Phe Ser  
35 40 45

Pro Gly Ser Lys Lys Leu Val Val Ala Thr Glu Lys Asn Val Ile Ala  
50 55 60

Ala Leu Asn Ser Arg Thr Gly Glu Ile Leu Trp Arg His Val Asp Lys  
65 70 75 80

Gly Thr Ala Glu Gly Ala Val Asp Ala Met Leu Leu His Gly Gln Asp  
85 90 95

Val Ile Thr Val Ser Asn Gly Gly Arg Ile Met Arg Ser Trp Glu Thr  
100 105 110

Asn Ile Gly Gly Leu Asn Trp Glu Ile Thr Leu Asp Ser Gly Ser Phe  
115 120 125

Gln Ala Leu Gly Leu Val Gly Leu Gln Glu Ser Val Arg Tyr Ile Ala  
130 135 140

Val Leu Lys Lys Thr Thr Leu Ala Leu His His Leu Ser Ser Gly His  
145 150 155 160

Leu Lys Trp Val Glu His Leu Pro Glu Ser Asp Ser Ile His Tyr Gln  
165 170 175

Met Val Tyr Ser Tyr Gly Ser Gly Val Val Trp Ala Leu Gly Val Val  
180 185 190

Pro Phe Ser His Val Asn Ile Val Lys Phe Asn Val Glu Asp Gly Glu  
195 200 205

Ile Val Gln Gln Val Arg Val Ser Thr Pro Trp Leu Gln His Leu Ser  
210 215 220

Gly Ala Cys Gly Val Val Asp Glu Ala Val Leu Val Cys Pro Asp Pro  
225 230 235 240

Ser Ser Arg Ser Leu Gln Thr Leu Ala Leu Glu Thr Glu Trp Glu Leu  
245 250 255

Arg Gln Ile Pro Leu Gln Ser Leu Asp Leu Glu Phe Gly Ser Gly Phe  
                   260                  265                  270

Gln Pro Arg Val Leu Pro Thr Gln Pro Asn Pro Val Asp Ala Ser Arg  
                   275                  280                  285

Ala Gln Phe Phe Leu His Leu Ser Pro Ser His Tyr Ala Leu Leu Gln  
                   290                  295                  300

Tyr His Tyr Gly Thr Leu Ser Leu Leu Lys Asn Phe Pro Gln Thr Ala  
   305                  310                  315                  320

Leu Val Ser Phe Ala Thr Thr Gly Glu Lys Thr Val Ala Ala Val Met  
                   325                  330                  335

Ala Cys Arg Asn Glu Val Gln Lys Thr Ser Ser Ser Glu Asp Gly Ser  
                   340                  345                  350

Met Gly Glu Leu Phe Gly Glu Val  
                   355                  360

<210> 1808  
 <211> 75  
 <212> PRT  
 <213> Homo sapiens

<400> 1808  
 Met Arg Gly Ile Tyr Thr Ala Pro Ser Gly Leu Glu Ser Thr Cys Leu  
   1                  5                  10                  15

Val Val Ala Tyr Gly Leu Asp Ile Tyr Gln Thr Arg Val Tyr Pro Ser  
                   20                  25                  30

Lys Gln Phe Asp Val Leu Lys Asp Asp Tyr Asp Tyr Val Leu Ile Ser  
                   35                  40                  45

Ser Val Leu Phe Gly Leu Val Phe Ala Thr Met Ile Thr Lys Arg Leu  
   50                  55                  60

Ala Gln Val Lys Leu Leu Asn Arg Ala Trp Arg  
   65                  70                  75

<210> 1809  
 <211> 136  
 <212> PRT  
 <213> Homo sapiens

<400> 1809  
 Glu Phe Gly Thr Arg Lys Glu Glu Glu Arg Val Ala Met Val Pro Arg  
   1                  5                  10                  15

Leu Ala Phe Ile Leu Phe Val Leu Ala Arg Asp Tyr Asn Val Thr Ser  
                   20                  25                  30

Leu Gly Gln Asp Leu Asn Trp Lys Tyr Glu Ala Lys Asp Tyr Arg Lys  
                   35                  40                  45

Thr Gly Glu Leu Lys Asn Ile Gly Glu Cys Gly Arg Ser Tyr Lys Phe  
 50 55 60  
 Leu Ser Arg Asn Gln Asp Trp Asn Thr Arg Tyr Ser His Pro Asn Arg  
 65 70 75 80  
 Pro Ala Lys Tyr Ser Gly Ile Asp Glu Met Cys Lys Ala Gln Glu Ser  
 85 90 95  
 Gly Leu Ser Pro Ser Lys Gln Leu Asn Arg Leu Ser Thr Leu Thr Ala  
 100 105 110  
 Leu Lys Val Ser Gln Pro Val Lys Leu Ala Leu Phe Ser Arg Ser Pro  
 115 120 125  
 Arg Arg Glu Ile Arg Val Gly Arg  
 130 135

&lt;210&gt; 1810

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (56)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1810

Gly Leu His Phe Asn Ile Arg Val Asp His Gly Met Leu Trp Ala Pro  
 1 5 10 15

Val Leu Tyr Lys Asp Val Gly Gln Glu Leu Pro Val Val Ser Thr Ala  
 20 25 30

Pro Ser His Ile Ala Leu Leu Met Glu Pro Phe Thr Pro Asp Val Leu  
 35 40 45

Ser Arg Leu Met Gly Arg Ile Xaa Val Cys Lys Asp Tyr Val Ile Asp  
 50 55 60

Gln Leu Trp Ser Val Leu Lys Glu Ile Cys Gln Trp Ile Ile Pro Tyr  
 65 70 75 80

Gly

&lt;210&gt; 1811

&lt;211&gt; 91

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (78)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1811

```

Met His Leu Gly Leu Val Ser Leu Ile Leu Phe Cys Gln Ala Leu Glu
 1           5           10           15

Val Asp Ile Ser Leu Gln Gly Pro Gly Ile Val Pro Gly Arg Ser Glu
          20           25           30

Val Ser Leu Ser Leu Gln Gly Pro Arg Gly Gly Gly Cys Phe Pro Ile
          35           40           45

Ala Thr Gly Ala Pro Phe Ile Val Leu Leu Pro Leu Gly Leu Tyr Leu
          50           55           60

Val Phe His Leu Cys Cys Phe Phe Gly Leu Phe Cys Ala Xaa Leu Arg
          65           70           75           80

Leu Arg Glu Pro Gly Trp Asp His Leu Ile Ile
          85           90

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<210> 1812

<211> 230

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (63)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (66)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1812

```

Met Gly Asn Ser Leu Ser Val Phe Cys Ser Trp Phe Cys Arg Arg Ser
 1           5           10           15

Trp Pro Cys His Arg Gln Pro Ala Arg Leu Val Arg Glu Ala Phe Pro
          20           25           30

Ala Gly Arg Ala His Pro Ala Ala Pro Ala Pro Val Pro Ala Arg Gly
          35           40           45

Ile Val Gly Arg Phe Pro Leu Leu Phe Asn Arg Gln Arg His Xaa Gly
          50           55           60

Pro Xaa Phe Pro Val Arg Trp Asp Gly Ala Pro Met Arg Leu Cys Leu
          65           70           75           80

Ile Pro Arg Asn Thr Gly Thr Pro Gln Arg Val Leu Arg Pro Val Val
          85           90           95

Trp Ser Pro Pro Ser Arg Lys Lys Pro Val Leu Ser Pro His Asn Ser
          100           105           110

```

Ile Met Phe Gly His Leu Ser Pro Val Arg Ile Pro Cys Leu Arg Gly  
 115 120 125

Lys Phe Asn Leu Gln Leu Pro Ser Leu Asp Asp Gln Val Ile Pro Ala  
 130 135 140

Arg Leu Pro Lys Thr Glu Val Ser Ala Glu Glu Pro Lys Glu Ala Thr  
 145 150 155 160

Glu Val Lys Asp Gln Val Glu Thr Gln Gly Gln Glu Asp Asn Lys Arg  
 165 170 175

Gly Pro Cys Ser Asn Gly Glu Ala Ala Ser Thr Ser Arg Pro Leu Glu  
 180 185 190

Thr Gln Gly Asn Leu Thr Ser Ser Trp Tyr Asn Pro Arg Pro Leu Glu  
 195 200 205

Gly Asn Val His Leu Lys Ser Leu Thr Glu Lys Asn Gln Thr Asp Lys  
 210 215 220

Ala Gln Val His Ala Val  
 225 230

&lt;210&gt; 1813

&lt;211&gt; 232

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1813

Met Gly Asn Ser Leu Ser Val Phe Cys Ser Trp Phe Cys Arg Arg Ser  
 1 5 10 15

Trp Pro Cys His Arg Gln Pro Ala Arg Leu Val Arg Glu Ala Phe Pro  
 20 25 30

Ala Gly Arg Ala His Pro Ala Ala Pro Ala Pro Val Pro Ala Arg Gly  
 35 40 45

Ile Val Gly Arg Phe Pro Leu Leu Phe Asn Arg Gln Arg His Leu Gly  
 50 55 60

Pro Ser Phe Pro Val Arg Trp Asp Gly Ala Pro Met Arg Leu Cys Leu  
 65 70 75 80

Ile Pro Arg Asn Thr Gly Thr Pro Gln Arg Val Leu Arg Pro Val Val  
 85 90 95

Trp Ser Pro Pro Ser Arg Lys Lys Pro Val Leu Ser Pro His Asn Ser  
 100 105 110

Ile Met Phe Gly His Leu Ser Pro Val Arg Ile Pro Cys Leu Arg Gly  
 115 120 125

Lys Phe Asn Leu Gln Leu Pro Ser Leu Asp Asp Gln Val Ile Pro Ala  
 130 135 140

Arg Leu Pro Lys Thr Glu Val Ser Ala Glu Glu Pro Lys Glu Ala Thr



145                      150                      155                      160  
 Glu Val Lys Asp Gln Val Glu Thr Gln Gly Gln Glu Asp Asn Lys Arg  
                                  165                                   170                                   175  
 Gly Pro Cys Ser Asn Gly Glu Ala Ala Ser Thr Ser Arg Pro Leu Glu  
                                  180                                   185                                   190  
 Thr Gln Gly Asn Leu Thr Ser Ser Trp Tyr Asn Pro Arg Pro Leu Glu  
                                  195                                   200                                   205  
 Gly Asn Val His Leu Lys Ser Leu Thr Glu Lys Asn Gln Thr Asp Lys  
                                  210                                   215                                   220  
 Ala Gln Val His Ala Val Ser Cys  
 225                                   230

<210> 1814  
 <211> 156  
 <212> PRT  
 <213> Homo sapiens

<400> 1814  
 Met Gln Ile Gln Val Ala Gly Leu Leu Gln Phe Ala Val Pro Leu Phe  
   1                                  5                                  10                                  15  
 Ser Thr Ala Glu Glu Asp Leu Leu Ala Ile Gln Leu Leu Leu Asn Ser  
                                   20                                  25                                  30  
 Ser Glu Ser Ser Leu His Gln Leu Thr Ala Met Val Asp Cys Arg Gly  
                                   35                                  40                                  45  
 Leu His Lys Asp Tyr Leu Asp Ala Leu Ala Gly Ile Cys Tyr Asp Gly  
                                   50                                  55                                  60  
 Leu Gln Gly Leu Leu Tyr Leu Gly Leu Phe Ser Phe Leu Ala Ala Leu  
   65                                  70                                  75                                  80  
 Ala Phe Ser Thr Met Ile Cys Ala Gly Pro Arg Ala Trp Lys His Phe  
                                   85                                  90                                  95  
 Thr Thr Arg Asn Arg Asp Tyr Asp Asp Ile Asp Asp Asp Asp Pro Phe  
                                   100                                  105                                  110  
 Asn Pro Gln Ala Trp Arg Met Ala Ala His Ser Pro Pro Arg Gly Gln  
                                   115                                  120                                  125  
 Leu His Ser Phe Cys Ser Tyr Ser Ser Gly Leu Gly Ser Gln Thr Ser  
                                   130                                  135                                  140  
 Leu Gln Pro Pro Ala Gln Thr Ile Ser Asn Ala Pro  
 145                                  150                                  155

<210> 1815  
 <211> 213  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1815

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Met Gln Ile Gln Val Ala Gly Leu Leu Gln Phe Ala Val Pro Leu Phe
 1              5              10              15

Ser Thr Ala Glu Glu Asp Leu Leu Ala Ile Gln Leu Leu Leu Asn Ser
          20              25              30

Ser Glu Ser Ser Leu His Gln Leu Thr Ala Met Val Asp Cys Arg Gly
          35              40              45

Leu His Lys Asp Tyr Leu Asp Ala Leu Ala Gly Ile Cys Tyr Asp Gly
          50              55              60

Leu Gln Gly Leu Leu Tyr Leu Gly Leu Phe Ser Phe Leu Ala Ala Leu
          65              70              75              80

Ala Phe Ser Thr Met Ile Cys Ala Gly Pro Arg Ala Trp Lys His Phe
          85              90              95

Thr Thr Arg Asn Arg Asp Tyr Asp Asp Ile Asp Asp Asp Asp Pro Phe
          100              105              110

Asn Pro Gln Ala Trp Arg Met Ala Ala His Ser Pro Pro Arg Gly Gln
          115              120              125

Leu His Ser Phe Cys Ser Tyr Ser Ser Gly Leu Gly Ser Gln Thr Ser
          130              135              140

Leu Gln Pro Pro Ala Gln Thr Ile Ser Asn Ala Pro Val Ser Glu Tyr
          145              150              155              160

Met Asn Gln Ala Met Leu Phe Gly Arg Asn Pro Arg Tyr Glu Asn Val
          165              170              175

Pro Leu Ile Gly Arg Ala Ser Pro Pro Pro Thr Tyr Ser Pro Ser Met
          180              185              190

Arg Ala Thr Tyr Leu Ser Val Ala Asp Glu His Leu Arg His Tyr Gly
          195              200              205

Asn Gln Phe Pro Ala
          210

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&lt;210&gt; 1816

&lt;211&gt; 28

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (3)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1816

```

Glu Cys Xaa Arg Lys Pro Thr Pro Arg Ala Glu Phe Leu Gln Pro Gly
 1              5              10              15

```

Gly Ser Thr Ser Ser Arg Ala Ala Ala Thr Ala Val  
                   20                                  25

<210> 1817  
 <211> 75  
 <212> PRT  
 <213> Homo sapiens

<400> 1817  
 Met Leu Asn Pro Leu Arg Gln Leu Phe Lys Leu Met Ala Ser Leu Phe  
   1                                  5                                  10                                  15  
 Leu Ser Val Phe Thr Leu Gly Leu Pro Phe Ala Leu Phe Gln Tyr Tyr  
                   20                                  25                                  30  
 Ala Tyr Thr Gln Phe Cys Leu Pro Gly Ser Ala Arg Pro Ile Pro Glu  
                   35                                  40                                  45  
 Pro Leu Val Gln Leu Ala Val Asp Lys Gly Tyr Arg Ile Ala Glu Gly  
                   50                                  55                                  60  
 Asn Glu Pro Leu Gly Ala Ser Gly Met Phe His  
   65                                  70                                  75

<210> 1818  
 <211> 280  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (94)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (95)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1818  
 Met His Ser Gln Cys Gln Gly Phe Phe Ser Ser Leu Thr Met Leu Asn  
   1                                  5                                  10                                  15  
 Pro Leu Arg Gln Leu Phe Lys Leu Met Ala Ser Leu Phe Leu Ser Val  
                   20                                  25                                  30  
 Phe Thr Leu Gly Leu Pro Phe Ala Leu Phe Gln Tyr Tyr Ala Tyr Thr  
                   35                                  40                                  45  
 Gln Phe Cys Leu Pro Gly Ser Ala Arg Pro Ile Pro Glu Pro Leu Val  
   50                                  55                                  60  
 Gln Leu Ala Val Asp Lys Gly Tyr Arg Ile Ala Glu Gly Asn Glu Pro  
   65                                  70                                  75                                  80

Pro Trp Cys Phe Trp Asp Val Pro Leu Ile Tyr Ser Tyr Xaa Xaa Asp  
                     85                    90                    95  
 Val Tyr Trp Asn Val Gly Phe Leu Lys Tyr Tyr Glu Leu Lys Gln Val  
                     100                    105                    110  
 Pro Asn Phe Leu Leu Ala Ala Pro Val Ala Ile Leu Val Ala Trp Ala  
                     115                    120                    125  
 Thr Trp Thr Tyr Val Thr Thr His Pro Trp Leu Cys Leu Thr Leu Gly  
                     130                    135                    140  
 Leu Gln Arg Ser Lys Asn Asn Lys Thr Leu Glu Lys Pro Asp Leu Gly  
 145                    150                    155                    160  
 Phe Leu Ser Pro Gln Val Phe Val Tyr Val Val His Ala Ala Val Leu  
                     165                    170                    175  
 Leu Leu Phe Gly Gly Leu Cys Met His Val Gln Val Leu Thr Arg Phe  
                     180                    185                    190  
 Leu Gly Ser Ser Thr Pro Ile Met Tyr Trp Phe Pro Ala His Leu Leu  
                     195                    200                    205  
 Gln Asp Gln Glu Pro Leu Leu Arg Ser Leu Lys Thr Val Pro Trp Lys  
                     210                    215                    220  
 Pro Leu Ala Glu Asp Ser Pro Pro Gly Gln Lys Val Pro Arg Asn Pro  
 225                    230                    235                    240  
 Ile Met Gly Leu Leu Tyr His Trp Lys Thr Cys Ser Pro Val Thr Arg  
                     245                    250                    255  
 Tyr Ile Leu Gly Tyr Phe Leu Thr Tyr Trp Leu Leu Gly Leu Leu Leu  
                     260                    265                    270  
 His Cys Asn Phe Leu Pro Trp Thr  
                     275                    280

&lt;210&gt; 1819

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1819

Met Leu Phe Phe Cys Gly Asp Leu Leu Ser Arg Ser Gln Ile Phe Tyr  
   1                    5                    10                    15  
 Tyr Ser Thr Gly Met Thr Val Gly Ile Val Ala Ser Leu Leu Ile Ile  
                     20                    25                    30  
 Ile Phe Ile Leu Ser Lys Phe Met Pro Lys Lys Ser Pro Ile Tyr Val  
                     35                    40                    45  
 Ile Leu Val Gly Gly Trp Ser Phe Ser Leu Tyr Leu Ile Gln Leu Val  
                     50                    55                    60  
 Phe Lys Asn Leu Gln Glu Ile Trp Arg Cys Tyr Trp Gln Tyr Leu Leu

65	70	75	80
Ser Tyr Val Leu Thr Val Gly Phe Met Ser Phe Ala Val Cys Tyr Lys	85	90	95
Tyr Gly Pro Leu Glu Asn Glu Arg Ser Ile Asn Leu Leu Thr Trp Thr	100	105	110
Leu Gln Leu Met Gly Leu Cys Phe Met Tyr Ser Gly Ile Gln Ile Pro	115	120	125
His Ile Ala Leu Ala Ile Ile Ile Ile Ala Leu Cys Thr Lys Asn Leu	130	135	140
Glu His Pro Ile Gln Trp Leu Tyr Ile Thr Cys Arg Lys Val Cys Lys	145	150	155
Gly Ala Glu Lys Pro Val Pro Pro Arg Leu Leu Thr Glu Glu Glu Tyr	165	170	175
Arg Ile Gln Gly Glu Val Glu Thr Arg Lys Ala Leu Glu Glu Leu Arg	180	185	190
Glu Phe Cys Asn Ser Pro Asp Cys Ser Ala Trp Lys Thr Val Ser Arg	195	200	205
Ile Gln Ser Pro Lys Arg Phe Ala Asp Phe Val Glu Gly Ser Ser His	210	215	220
Leu Thr Pro Asn Glu Val Ser Val His Glu Gln Glu Tyr Gly Leu Gly	225	230	235
Ser Ile Ile Ala Gln Asp Glu Ile Tyr Glu Glu Ala Ser Ser Glu Glu	245	250	255
Glu Asp Ser Tyr Ser Arg Cys Pro Ala Ile Thr Gln Asn Asn Phe Leu	260	265	270
Thr			

&lt;210&gt; 1820

&lt;211&gt; 96

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (81)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (83)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (84)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (96)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1820

Met	Lys	Val	Ala	Val	Ser	Pro	Ala	Val	Gly	Pro	Gly	Pro	Trp	Gly	Ser
1				5					10					15	

Gly	Val	Gly	Gly	Gly	Gly	Thr	Val	Arg	Leu	Leu	Leu	Ile	Leu	Ser	Gly
		20						25					30		

Cys	Leu	Val	Tyr	Gly	Thr	Ala	Glu	Thr	Asp	Val	Asn	Val	Val	Met	Leu
		35					40				45				

Gln	Glu	Ser	Gln	Val	Cys	Glu	Lys	Arg	Ala	Ser	Gln	Gln	Phe	Cys	Tyr
	50					55					60				

Thr	Asn	Val	Leu	Ile	Pro	Lys	Trp	His	Asp	Ile	Trp	Thr	Arg	Ile	Gln
65					70					75					80

Xaa	Arg	Xaa	Xaa	Ser	Ser	Arg	Leu	Val	Arg	Val	Thr	Gln	Val	Glu	Xaa
				85					90					95	

&lt;210&gt; 1821

&lt;211&gt; 273

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1821

Met	Leu	Phe	Phe	Cys	Gly	Asp	Leu	Leu	Ser	Arg	Ser	Gln	Ile	Phe	Tyr
1				5					10					15	

Tyr	Ser	Thr	Gly	Met	Thr	Val	Gly	Ile	Val	Ala	Ser	Leu	Leu	Ile	Ile
			20					25					30		

Ile	Phe	Ile	Leu	Ser	Lys	Phe	Met	Pro	Lys	Lys	Ser	Pro	Ile	Tyr	Val
		35					40					45			

Ile	Leu	Val	Gly	Gly	Trp	Ser	Phe	Ser	Leu	Tyr	Leu	Ile	Gln	Leu	Val
	50					55					60				

Phe	Lys	Asn	Leu	Gln	Glu	Ile	Trp	Arg	Cys	Tyr	Trp	Gln	Tyr	Leu	Leu
65					70					75					80

Ser	Tyr	Val	Leu	Thr	Val	Gly	Phe	Met	Ser	Phe	Ala	Val	Cys	Tyr	Lys
				85					90					95	

Tyr	Gly	Pro	Leu	Glu	Asn	Glu	Arg	Ser	Ile	Asn	Leu	Leu	Thr	Trp	Thr
			100						105					110	

Leu	Gln	Leu	Met	Gly	Leu	Cys	Phe	Met	Tyr	Ser	Gly	Ile	Gln	Ile	Pro
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

115	120	125
His Ile Ala Leu Ala Ile Ile Ile Ile Ala Leu Cys Thr Lys Asn Leu 130 135 140		
Glu His Pro Ile Gln Trp Leu Tyr Ile Thr Cys Arg Lys Val Cys Lys 145 150 155 160		
Gly Ala Glu Lys Pro Val Pro Pro Arg Leu Leu Thr Glu Glu Glu Tyr 165 170 175		
Arg Ile Gln Gly Glu Val Glu Thr Arg Lys Ala Leu Glu Glu Leu Arg 180 185 190		
Glu Phe Cys Asn Ser Pro Asp Cys Ser Ala Trp Lys Thr Val Ser Arg 195 200 205		
Ile Gln Ser Pro Lys Arg Phe Ala Asp Phe Val Glu Gly Ser Ser His 210 215 220		
Leu Thr Pro Asn Glu Val Ser Val His Glu Gln Glu Tyr Gly Leu Gly 225 230 235 240		
Ser Ile Ile Ala Gln Asp Glu Ile Tyr Glu Glu Ala Ser Ser Glu Glu 245 250 255		
Glu Asp Ser Tyr Ser Arg Cys Pro Ala Ile Thr Gln Asn Asn Phe Leu 260 265 270		

Thr

<210> 1822  
 <211> 273  
 <212> PRT  
 <213> Homo sapiens

<400> 1822  
 Met Leu Phe Phe Cys Gly Asp Leu Leu Ser Arg Ser Gln Ile Phe Tyr  
 1 5 10 15  
 Tyr Ser Thr Gly Met Thr Val Gly Ile Val Ala Ser Leu Leu Ile Ile  
 20 25 30  
 Ile Phe Ile Leu Ser Lys Phe Met Pro Lys Lys Ser Pro Ile Tyr Val  
 35 40 45  
 Ile Leu Val Gly Gly Trp Ser Phe Ser Leu Tyr Leu Ile Gln Leu Val  
 50 55 60  
 Phe Lys Asn Leu Gln Glu Ile Trp Arg Cys Tyr Trp Gln Tyr Leu Leu  
 65 70 75 80  
 Ser Tyr Val Leu Thr Val Gly Phe Met Ser Phe Ala Val Cys Tyr Lys  
 85 90 95  
 Tyr Gly Pro Leu Glu Asn Glu Arg Ser Ile Asn Leu Leu Thr Trp Thr  
 100 105 110

Leu Gln Leu Met Gly Leu Cys Phe Met Tyr Ser Gly Ile Gln Ile Pro  
 115 120 125  
 His Ile Ala Leu Ala Ile Ile Ile Ile Ala Leu Cys Thr Lys Asn Leu  
 130 135 140  
 Glu His Pro Ile Gln Trp Leu Tyr Ile Thr Cys Arg Lys Val Cys Lys  
 145 150 155 160  
 Gly Ala Glu Lys Pro Val Pro Pro Arg Leu Leu Thr Glu Glu Glu Tyr  
 165 170 175  
 Arg Ile Gln Gly Glu Val Glu Thr Arg Lys Ala Leu Glu Glu Leu Arg  
 180 185 190  
 Glu Phe Cys Asn Ser Pro Asp Cys Ser Ala Trp Lys Thr Val Ser Arg  
 195 200 205  
 Ile Gln Ser Pro Lys Arg Phe Ala Asp Phe Val Glu Gly Ser Ser His  
 210 215 220  
 Leu Thr Pro Asn Glu Val Ser Val His Glu Gln Glu Tyr Gly Leu Gly  
 225 230 235 240  
 Ser Ile Ile Ala Gln Asp Glu Ile Tyr Glu Glu Ala Ser Ser Glu Glu  
 245 250 255  
 Glu Asp Ser Tyr Ser Arg Cys Pro Ala Ile Thr Gln Asn Asn Phe Leu  
 260 265 270

Thr

<210> 1823

<211> 105

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (69)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1823

Met Phe Ala Leu Ala Trp Lys Val Ile Phe Ser Val Met Leu Gln Asn  
 1 5 10 15

Pro Ile Arg Tyr Pro Ser Val Leu Gly Ile Lys Ser Ser Leu Leu Ser  
 20 25 30

Ser Leu Val Leu Val Met Val Trp Gly Asn Glu Lys Ser Gly Pro Cys  
 35 40 45

Pro Thr Pro Lys Ser Arg Lys Gly Arg Arg Ser Cys Pro Ala Gln Val  
 50 55 60

Gly Arg Gly Glu Xaa Gly Ser Tyr Trp Asp Pro Glu Phe Arg Leu Ser



65					70					75					80
Arg	Lys	Ser	Asn	Gln	Gly	Leu	Arg	Arg	Asp	Tyr	Leu	Ser	Leu	Tyr	His
				85					90					95	
Phe	Asn	Leu	His	Phe	Arg	Asp	Thr	Phe							
			100					105							

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<210> 1824
<211> 105
<212> PRT
<213> Homo sapiens
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```

<400> 1824
Met Phe Ala Leu Ala Trp Lys Val Ile Phe Ser Val Met Leu Gln Asn
  1              5              10              15

Pro Ile Arg Tyr Pro Ser Val Leu Gly Ile Lys Ser Ser Leu Leu Ser
      20              25              30

Ser Leu Val Leu Val Met Val Trp Gly Asn Glu Lys Ser Gly Pro Cys
      35              40              45

Pro Thr Pro Lys Ser Arg Lys Gly Arg Arg Ser Cys Pro Ala Gln Val
      50              55              60

Gly Arg Gly Glu Glu Gly Ser Tyr Trp Asp Pro Glu Phe Arg Leu Ser
      65              70              75              80

Arg Lys Ser Asn Gln Gly Leu Arg Arg Asp Tyr Leu Ser Leu Tyr His
      85              90              95

Phe Asn Leu His Phe Arg Asp Thr Phe
      100              105

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<210> 1825
<211> 94
<212> PRT
<213> Homo sapiens
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```

<400> 1825
Met Leu Leu Gly Phe Leu Val Leu Ile Pro Trp Gly Ser Leu Ile Leu
  1             5             10             15
Gly Ser Ser Asp Leu Asp Pro Ser Ser Leu Pro Leu Gly Thr Arg Gly
  20             25             30
His Gly Trp Arg Trp Pro Pro Leu Ser Pro Val Gln Ile Leu Tyr Pro
  35             40             45
Leu Ala Gly Asp Pro His Ala Ala Val Ser Cys Ser Cys Cys Gly Glu
  50             55             60
Thr Glu Leu Arg Ala Leu Leu Thr Gly Ser Leu Pro Met Glu Ala Phe
  65             70             75             80

```

Ser Gly Leu His Ser Ile Glu Tyr Ser Ser Arg Thr Ala Cys  
                             85                            90

<210> 1826

<211> 94

<212> PRT

<213> Homo sapiens

<400> 1826

Met Leu Leu Gly Phe Leu Val Leu Ile Pro Trp Gly Ser Leu Ile Leu  
   1                            5                            10                            15

Gly Ser Ser Asp Leu Asp Pro Ser Ser Leu Pro Leu Gly Thr Arg Gly  
                             20                            25                            30

His Gly Trp Arg Trp Pro Pro Leu Ser Pro Val Gln Ile Leu Tyr Pro  
                             35                            40                            45

Leu Ala Gly Asp Pro His Ala Ala Val Ser Cys Ser Cys Cys Gly Glu  
                             50                            55                            60

Thr Glu Leu Arg Ala Leu Leu Thr Gly Ser Leu Pro Met Glu Ala Phe  
   65                            70                            75                            80

Ser Gly Leu His Ser Ile Glu Tyr Ser Ser Arg Thr Ala Cys  
                             85                            90

<210> 1827

<211> 261

<212> PRT

<213> Homo sapiens

<400> 1827

Met Ala Val Thr Ala Cys Gln Gly Leu Gly Phe Val Val Ser Leu Ile  
   1                            5                            10                            15

Gly Ile Ala Gly Ile Ile Ala Ala Thr Cys Met Asp Gln Trp Ser Thr  
                             20                            25                            30

Gln Asp Leu Tyr Asn Asn Pro Val Thr Ala Val Phe Asn Tyr Gln Gly  
                             35                            40                            45

Leu Trp Arg Ser Cys Val Arg Glu Ser Ser Gly Phe Thr Glu Cys Arg  
                             50                            55                            60

Gly Tyr Phe Thr Leu Leu Gly Leu Pro Ala Met Leu Gln Ala Val Arg  
   65                            70                            75                            80

Ala Leu Met Ile Val Gly Ile Val Leu Gly Ala Ile Gly Leu Leu Val  
                             85                            90                            95

Ser Ile Phe Ala Leu Lys Cys Ile Arg Ile Gly Ser Met Glu Asp Ser  
                             100                            105                            110

Ala Lys Ala Asn Met Thr Leu Thr Ser Gly Ile Met Phe Ile Val Ser  
                             115                            120                            125

Gly Leu Cys Ala Ile Ala Gly Val Ser Val Phe Ala Asn Met Leu Val  
 130 135 140  
 Thr Asn Phe Trp Met Ser Thr Ala Asn Met Tyr Thr Gly Met Gly Gly  
 145 150 155 160  
 Met Val Gln Thr Val Gln Thr Arg Tyr Thr Phe Gly Ala Ala Leu Phe  
 165 170 175  
 Val Gly Trp Val Ala Gly Gly Leu Thr Leu Ile Gly Gly Val Met Met  
 180 185 190  
 Cys Ile Ala Cys Arg Gly Leu Ala Pro Glu Glu Thr Asn Tyr Lys Ala  
 195 200 205  
 Val Ser Tyr His Ala Ser Gly His Ser Val Ala Tyr Lys Pro Gly Gly  
 210 215 220  
 Phe Lys Ala Ser Thr Gly Phe Gly Ser Asn Thr Lys Asn Lys Lys Arg  
 225 230 235 240  
 Tyr Asp Gly Gly Ala Arg Thr Glu Asp Glu Val Gln Ser Tyr Pro Ser  
 245 250 255  
 Lys His Asp Tyr Val  
 260

&lt;210&gt; 1828

&lt;211&gt; 261

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (125)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (127)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1828

Met Ala Val Thr Ala Cys Gln Gly Leu Gly Phe Val Val Ser Leu Ile  
 1 5 10 15

Gly Ile Ala Gly Ile Ile Ala Ala Thr Cys Met Asp Gln Trp Ser Thr  
 20 25 30

Gln Asp Leu Tyr Asn Asn Pro Val Thr Ala Val Phe Asn Tyr Gln Gly  
 35 40 45

Leu Trp Arg Ser Cys Val Arg Glu Ser Ser Gly Phe Thr Glu Cys Arg  
 50 55 60

Gly Tyr Phe Thr Leu Leu Gly Leu Pro Ala Met Leu Gln Ala Val Arg  
 65 70 75 80

Ala Leu Met Ile Val Gly Ile Val Leu Gly Ala Ile Gly Leu Leu Val  
85 90 95

Ser Ile Phe Ala Leu Lys Cys Ile Arg Ile Gly Ser Met Glu Asp Ser  
100 105 110

Ala Lys Ala Asn Met Thr Leu Thr Ser Gly Ile Met Xaa Ile Xaa Ser  
115 120 125

Gly Leu Cys Ala Ile Ala Gly Val Ser Val Phe Ala Asn Met Leu Val  
130 135 140

Thr Asn Phe Trp Met Ser Thr Ala Asn Met Tyr Thr Gly Met Gly Gly  
145 150 155 160

Met Val Gln Thr Val Gln Thr Arg Tyr Thr Phe Gly Ala Ala Leu Phe  
165 170 175

Val Gly Trp Val Ala Gly Gly Leu Thr Leu Ile Gly Gly Val Met Met  
180 185 190

Cys Ile Ala Cys Arg Gly Leu Ala Pro Glu Glu Thr Asn Tyr Lys Ala  
195 200 205

Val Ser Tyr His Ala Ser Gly His Ser Val Ala Tyr Lys Pro Gly Gly  
210 215 220

Phe Lys Ala Ser Thr Gly Phe Gly Ser Asn Thr Lys Asn Lys Lys Arg  
225 230 235 240

Tyr Asp Gly Gly Ala Arg Thr Glu Asp Glu Val Gln Ser Tyr Pro Ser  
245 250 255

Lys His Asp Tyr Val  
260

&lt;210&gt; 1829

&lt;211&gt; 92

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1829

Met Thr Ser Leu Leu Glu Gly Arg Met Val Leu Cys Val Ser Cys Leu  
1 5 10 15

Leu Leu Pro Leu Leu Leu Leu Lys His Phe Asn Gly Leu Met Thr  
20 25 30

Pro Tyr Leu Ala His Asn Val Tyr Cys Pro Ile Glu Tyr Ile Ser Phe  
35 40 45

Phe Pro Phe His Glu Lys Asn Ile Glu Tyr Ile Ser Ile Trp Phe Ile  
50 55 60

Phe Asp Ser Phe Lys Phe Ile Tyr Ser Arg Leu Leu Cys Ile Ser Gln  
65 70 75 80

Ile Tyr Val Leu Tyr Arg Ala Tyr Thr Leu Pro His  
                             85                            90

<210> 1830

<211> 92

<212> PRT

<213> Homo sapiens

<400> 1830

Met Thr Ser Leu Leu Glu Gly Arg Met Val Leu Cys Val Ser Cys Leu  
   1                            5                            10                            15

Leu Leu Pro Leu Leu Leu Leu Leu Lys His Phe Asn Gly Leu Met Thr  
                             20                            25                            30

Pro Tyr Leu Ala His Asn Val Tyr Cys Pro Ile Glu Tyr Ile Ser Phe  
                             35                            40                            45

Phe Pro Phe His Glu Lys Asn Ile Glu Tyr Ile Ser Ile Trp Phe Ile  
                             50                            55                            60

Phe Asp Ser Phe Lys Phe Ile Tyr Ser Arg Leu Leu Cys Ile Ser Gln  
   65                            70                            75                            80

Ile Tyr Val Leu Tyr Arg Ala Tyr Thr Leu Pro His  
                             85                            90

<210> 1831

<211> 92

<212> PRT

<213> Homo sapiens

<400> 1831

Met Thr Ser Leu Leu Glu Gly Arg Met Val Leu Cys Val Ser Cys Leu  
   1                            5                            10                            15

Leu Leu Pro Leu Leu Leu Leu Leu Lys His Phe Asn Gly Leu Met Thr  
                             20                            25                            30

Pro Tyr Leu Ala His Asn Val Tyr Cys Pro Ile Glu Tyr Ile Ser Phe  
                             35                            40                            45

Phe Pro Phe His Glu Lys Asn Ile Glu Tyr Ile Ser Ile Trp Phe Ile  
                             50                            55                            60

Phe Asp Ser Phe Lys Phe Ile Tyr Ser Arg Leu Leu Cys Ile Ser Gln  
   65                            70                            75                            80

Ile Tyr Val Leu Tyr Arg Ala Tyr Thr Leu Pro His  
                             85                            90

<210> 1832

<211> 270

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (113)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (118)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (157)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (268)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1832

Gly Glu Glu Phe Gln Pro Glu Gly Ser Lys Cys Thr Lys Cys Ser Cys  
1 5 10 15

Thr Gly Gly Arg Thr Gln Cys Val Arg Glu Val Cys Pro Ile Leu Ser  
20 25 30

Cys Pro Gln His Leu Ser His Ile Pro Pro Gly Gln Cys Cys Pro Lys  
35 40 45

Cys Leu Gly Gln Arg Lys Val Phe Asp Leu Pro Phe Gly Ser Cys Leu  
50 55 60

Phe Arg Ser Asp Val Tyr Asp Asn Gly Ser Ser Phe Leu Tyr Asp Asn  
65 70 75 80

Cys Thr Ala Cys Thr Cys Arg Asp Ser Thr Val Val Cys Lys Arg Lys  
85 90 95

Cys Ser His Pro Gly Gly Cys Asp Gln Gly Gln Glu Gly Cys Cys Glu  
100 105 110

Xaa Cys Leu Leu Arg Xaa Pro Pro Glu Asp Ile Lys Val Cys Lys Phe  
115 120 125

Gly Asn Lys Ile Phe Gln Asp Gly Glu Met Trp Ser Ser Ile Asn Cys  
130 135 140

Thr Ile Cys Ala Cys Val Lys Gly Arg Thr Glu Cys Xaa Asn Lys Gln  
145 150 155 160

Cys Ile Pro Ile Ser Ser Cys Pro Gln Gly Lys Ile Leu Asn Arg Lys  
165 170 175

Gly Cys Cys Pro Ile Cys Thr Glu Lys Pro Gly Val Cys Thr Val Phe  
180 185 190

Gly Asp Pro His Tyr Asn Thr Phe Asp Gly Arg Thr Phe Asn Phe Gln

195		200		205
Gly Thr Cys Gln Tyr Val	Leu Thr Lys Asp Cys Ser	Ser Pro Ala Ser		
210	215	220		
Pro Phe Gln Val Leu Val Lys Asn Asp Ala Arg Arg Thr Arg Ser Phe				
225	230	235		240
Ser Trp Thr Lys Ser Val Glu Leu Val Leu Gly Glu Thr Gly Ser Ala				
	245	250		255
Cys Ser Ser Thr Ser Pro Cys Ala Gly Thr Ala Xaa Ala Ser				
	260	265		270

&lt;210&gt; 1833

&lt;211&gt; 182

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (104)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (147)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (151)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (176)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (179)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1833

Met Leu Trp Phe Ser Gly Val Gly Ala Leu Ala Glu Arg Tyr Cys Arg
1 5 10 15

Arg Ser Pro Gly Ile Thr Cys Cys Val Leu Leu Leu Leu Asn Cys Ser
20 25 30

Gly Val Pro Met Ser Leu Ala Ser Ser Phe Leu Thr Gly Ser Val Ala
35 40 45

Lys Cys Glu Asn Glu Gly Glu Val Leu Gln Ile Pro Phe Ile Thr Asp
50 55 60

Asn Pro Cys Ile Met Cys Val Cys Leu Asn Lys Glu Val Thr Cys Lys
---

65		70		75		80									
Arg	Glu	Lys	Cys	Pro	Val	Leu	Ser	Arg	Asp	Cys	Ala	Leu	Ala	Ile	Lys
				85					90					95	
Gln	Arg	Gly	Ala	Cys	Cys	Glu	Xaa	Cys	Lys	Gly	Cys	Thr	Tyr	Glu	Gly
			100					105					110		
Asn	Thr	Tyr	Asn	Ser	Ser	Phe	Lys	Trp	Gln	Ser	Pro	Ala	Glu	Pro	Cys
		115					120					125			
Val	Leu	Arg	Gln	Cys	Gln	Glu	Gly	Val	Val	Thr	Glu	Ser	Gly	Val	Arg
	130					135					140				
Cys	Val	Xaa	His	Cys	Lys	Xaa	Pro	Leu	Glu	His	Leu	Gly	Met	Cys	Cys
145					150					155					160
Pro	Thr	Cys	Pro	Gly	Cys	Val	Phe	Glu	Gly	Val	Gln	Tyr	Gln	Glu	Xaa
				165				170						175	
Glu	Glu	Xaa	Gln	Pro	Glu										
			180												

&lt;210&gt; 1834

&lt;211&gt; 47

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1834

Ser	Ser	Ser	Leu	Leu	Ile	Ile	Tyr	Val	Cys	Met	Met	Asp	Val	Thr	Ile
1				5					10					15	

Tyr	Met	Ser	Cys	Val	Glu	Ile	Lys	Gly	Cys	Leu	Asp	Ala	Met	Leu	Ile
			20					25					30		

Leu	Leu	Ser	Met	Arg	Lys	Tyr	Leu	Lys	Lys	Leu	Leu	His	Asn	Ile	
		35					40						45		

&lt;210&gt; 1835

&lt;211&gt; 445

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (147)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (288)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (293)



<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (332)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (443)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1835

Met Leu Trp Phe Ser Gly Val Gly Ala Leu Ala Glu Arg Tyr Cys Arg  
1 5 10 15

Arg Ser Pro Gly Ile Thr Cys Cys Val Leu Leu Leu Leu Asn Cys Ser  
20 25 30

Gly Val Pro Met Ser Leu Ala Ser Ser Phe Leu Thr Gly Ser Val Ala  
35 40 45

Lys Cys Glu Asn Glu Gly Glu Val Leu Gln Ile Pro Phe Ile Thr Asp  
50 55 60

Asn Pro Cys Ile Met Cys Val Cys Leu Asn Lys Glu Val Thr Cys Lys  
65 70 75 80

Arg Glu Lys Cys Pro Val Leu Ser Arg Asp Cys Ala Leu Ala Ile Lys  
85 90 95

Gln Arg Gly Ala Cys Cys Glu Gln Cys Lys Gly Cys Thr Tyr Glu Gly  
100 105 110

Asn Thr Tyr Asn Ser Ser Phe Lys Trp Gln Ser Pro Ala Glu Pro Cys  
115 120 125

Val Leu Arg Gln Cys Gln Glu Gly Val Val Thr Glu Ser Gly Val Arg  
130 135 140

Cys Val Xaa His Cys Lys Asn Pro Leu Glu His Leu Gly Met Cys Cys  
145 150 155 160

Pro Thr Cys Pro Gly Cys Val Phe Glu Gly Val Gln Tyr Gln Glu Gly  
165 170 175

Glu Glu Phe Gln Pro Glu Gly Ser Lys Cys Thr Lys Cys Ser Cys Thr  
180 185 190

Gly Gly Arg Thr Gln Cys Val Arg Glu Val Cys Pro Ile Leu Ser Cys  
195 200 205

Pro Gln His Leu Ser His Ile Pro Pro Gly Gln Cys Cys Pro Lys Cys  
210 215 220

Leu Gly Gln Arg Lys Val Phe Asp Leu Pro Phe Gly Ser Cys Leu Phe  
225 230 235 240

Arg Ser Asp Val Tyr Asp Asn Gly Ser Ser Phe Leu Tyr Asp Asn Cys  
245 250 255

Thr Ala Cys Thr Cys Arg Asp Ser Thr Val Val Cys Lys Arg Lys Cys  
 260 265 270  
 Ser His Pro Gly Gly Cys Asp Gln Gly Gln Glu Gly Cys Cys Glu Xaa  
 275 280 285  
 Cys Leu Leu Arg Xaa Pro Pro Glu Asp Ile Lys Val Cys Lys Phe Gly  
 290 295 300  
 Asn Lys Ile Phe Gln Asp Gly Glu Met Trp Ser Ser Ile Asn Cys Thr  
 305 310 315 320  
 Ile Cys Ala Cys Val Lys Gly Arg Thr Glu Cys Xaa Asn Lys Gln Cys  
 325 330 335  
 Ile Pro Ile Ser Ser Cys Pro Gln Gly Lys Ile Leu Asn Arg Lys Gly  
 340 345 350  
 Cys Cys Pro Ile Cys Thr Glu Lys Pro Gly Val Cys Thr Val Phe Gly  
 355 360 365  
 Asp Pro His Tyr Asn Thr Phe Asp Gly Arg Thr Phe Asn Phe Gln Gly  
 370 375 380  
 Thr Cys Gln Tyr Val Leu Thr Lys Asp Cys Ser Ser Pro Ala Ser Pro  
 385 390 395 400  
 Phe Gln Val Leu Val Lys Asn Asp Ala Arg Arg Thr Arg Ser Phe Ser  
 405 410 415  
 Trp Thr Lys Ser Val Glu Leu Val Leu Gly Glu Thr Gly Ser Ala Cys  
 420 425 430  
 Ser Ser Thr Ser Pro Cys Ala Gly Thr Ala Xaa Ala Ser  
 435 440 445

&lt;210&gt; 1836

&lt;211&gt; 370

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1836

Leu Gly Gly Ala Arg Val Arg Arg Ala Val Gly Leu Ser Gly Thr Gly  
 1 5 10 15  
 Ala Glu Ala Gly Arg Ala Gly Ala Met Val Glu Lys Glu Glu Ala Gly  
 20 25 30  
 Gly Gly Ile Ser Glu Glu Glu Ala Ala Gln Tyr Asp Arg Gln Ile Arg  
 35 40 45  
 Leu Trp Gly Leu Glu Ala Gln Lys Arg Leu Arg Ala Ser Arg Val Leu  
 50 55 60  
 Leu Val Gly Leu Lys Gly Leu Gly Ala Glu Ile Ala Lys Asn Leu Ile  
 65 70 75 80

Leu Ala Gly Val Lys Gly Leu Thr Met Leu Asp His Glu Gln Val Thr  
 85 90 95  
 Pro Glu Asp Pro Gly Ala Gln Phe Leu Ile Arg Thr Gly Ser Val Gly  
 100 105 110  
 Arg Asn Arg Ala Glu Ala Ser Leu Glu Arg Ala Gln Asn Leu Asn Pro  
 115 120 125  
 Met Val Asp Val Lys Val Asp Thr Glu Asp Ile Glu Lys Lys Pro Glu  
 130 135 140  
 Ser Phe Phe Thr Gln Phe Asp Ala Val Cys Leu Thr Cys Cys Ser Arg  
 145 150 155 160  
 Asp Val Ile Val Lys Val Asp Gln Ile Cys His Lys Asn Ser Ile Lys  
 165 170 175  
 Phe Phe Thr Gly Asp Val Phe Gly Tyr His Gly Tyr Thr Phe Ala Asn  
 180 185 190  
 Leu Gly Glu His Glu Phe Val Glu Glu Lys Thr Lys Val Ala Lys Val  
 195 200 205  
 Ser Gln Gly Val Glu Asp Gly Pro Asp Thr Lys Arg Ala Lys Leu Asp  
 210 215 220  
 Ser Ser Glu Thr Thr Met Val Lys Lys Lys Val Val Phe Cys Pro Val  
 225 230 235 240  
 Lys Glu Ala Leu Glu Val Asp Trp Ser Ser Glu Lys Ala Lys Ala Ala  
 245 250 255  
 Leu Lys Arg Thr Thr Ser Asp Tyr Phe Leu Leu Gln Val Leu Leu Lys  
 260 265 270  
 Phe Arg Thr Asp Lys Gly Arg Asp Pro Ser Ser Asp Thr Tyr Glu Glu  
 275 280 285  
 Asp Ser Glu Leu Leu Leu Gln Ile Arg Asn Asp Val Leu Asp Ser Leu  
 290 295 300  
 Gly Ile Ser Pro Asp Leu Leu Pro Glu Asp Phe Val Arg Tyr Cys Phe  
 305 310 315 320  
 Ser Glu Met Ala Pro Val Cys Ala Val Val Gly Gly Ile Leu Ala Gln  
 325 330 335  
 Glu Ile Val Lys Ala Leu Ser Gln Arg Asp Pro Pro His Asn Asn Phe  
 340 345 350  
 Phe Phe Phe Asp Gly Met Lys Gly Asn Gly Ile Val Glu Cys Leu Gly  
 355 360 365  
 Pro Lys  
 370

&lt;210&gt; 1837

<211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 1837  
 Met Val Pro Ser Val Thr Leu Ile Leu His Cys Pro Gly Phe Ser Thr  
           1                  5                  10                  15  
 Glu Ser His Met Cys Gly Lys Pro Leu Ser Pro Arg Pro Thr Arg Thr  
                   20                  25                  30  
 Val Gly Arg Pro Val Ser Asn Ile Pro Val  
           35                  40

<210> 1838  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (17)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (47)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1838  
 Val Gln Gly Val Val Gln Ala Leu Lys Thr Asp His Ala Phe Cys Pro  
           1                  5                  10                  15  
 Xaa Leu Gln Gly Thr Glu Ser Ile Arg Leu Arg Ile Leu Glu Phe Glu  
                   20                  25                  30  
 Leu Asn Gln Val Arg Ser Val Ser Gln Glu Leu Pro Pro Gly Xaa Pro  
           35                  40                  45  
 Glu Ser Pro Gln Thr Asp Gly Gln Pro Pro Arg Ala Trp Pro Gln Leu  
           50                  55                  60  
 Gly Met Pro Ser Asn Pro Thr Cys Phe Ser Phe Leu Pro Gly Tyr Ser  
           65                  70                  75                  80  
 Gly Leu Arg Ser Ser Ala Leu Asn Phe  
                   85

<210> 1839  
 <211> 346  
 <212> PRT  
 <213> Homo sapiens

<400> 1839  
 Met Val Glu Lys Glu Glu Ala Gly Gly Gly Ile Ser Glu Glu Glu Ala  
           1                  5                  10                  15

Ala Gln Tyr Asp Arg Gln Ile Arg Leu Trp Gly Leu Glu Ala Gln Lys  
 20 25 30  
 Arg Leu Arg Ala Ser Arg Val Leu Leu Val Gly Leu Lys Gly Leu Gly  
 35 40 45  
 Ala Glu Ile Ala Lys Asn Leu Ile Leu Ala Gly Val Lys Gly Leu Thr  
 50 55 60  
 Met Leu Asp His Glu Gln Val Thr Pro Glu Asp Pro Gly Ala Gln Phe  
 65 70 75 80  
 Leu Ile Arg Thr Gly Ser Val Gly Arg Asn Arg Ala Glu Ala Ser Leu  
 85 90 95  
 Glu Arg Ala Gln Asn Leu Asn Pro Met Val Asp Val Lys Val Asp Thr  
 100 105 110  
 Glu Asp Ile Glu Lys Lys Pro Glu Ser Phe Phe Thr Gln Phe Asp Ala  
 115 120 125  
 Val Cys Leu Thr Cys Cys Ser Arg Asp Val Ile Val Lys Val Asp Gln  
 130 135 140  
 Ile Cys His Lys Asn Ser Ile Lys Phe Phe Thr Gly Asp Val Phe Gly  
 145 150 155 160  
 Tyr His Gly Tyr Thr Phe Ala Asn Leu Gly Glu His Glu Phe Val Glu  
 165 170 175  
 Glu Lys Thr Lys Val Ala Lys Val Ser Gln Gly Val Glu Asp Gly Pro  
 180 185 190  
 Asp Thr Lys Arg Ala Lys Leu Asp Ser Ser Glu Thr Thr Met Val Lys  
 195 200 205  
 Lys Lys Val Val Phe Cys Pro Val Lys Glu Ala Leu Glu Val Asp Trp  
 210 215 220  
 Ser Ser Glu Lys Ala Lys Ala Ala Leu Lys Arg Thr Thr Ser Asp Tyr  
 225 230 235 240  
 Phe Leu Leu Gln Val Leu Leu Lys Phe Arg Thr Asp Lys Gly Arg Asp  
 245 250 255  
 Pro Ser Ser Asp Thr Tyr Glu Glu Asp Ser Glu Leu Leu Leu Gln Ile  
 260 265 270  
 Arg Asn Asp Val Leu Asp Ser Leu Gly Ile Ser Pro Asp Leu Leu Pro  
 275 280 285  
 Glu Asp Phe Val Arg Tyr Cys Phe Ser Glu Met Ala Pro Val Cys Ala  
 290 295 300  
 Val Val Gly Gly Ile Leu Ala Gln Glu Ile Val Lys Ala Leu Ser Gln  
 305 310 315 320  
 Arg Asp Pro Pro His Asn Asn Phe Phe Phe Phe Asp Gly Met Lys Gly  
 325 330 335

Asn Gly Ile Val Glu Cys Leu Gly Pro Lys  
 340 345

<210> 1840

<211> 155

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (92)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (105)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (125)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (130)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1840

Met Gln His Gln Leu His Leu Leu Ile Cys Trp Gly Lys Gly Ser Lys  
 1 5 10 15

Ser Asn Thr Ser Cys Leu Gly Pro Val Leu Ser Cys Ser Asn Met Trp  
 20 25 30

Ser Leu Ala Leu Leu Val Val Ala Gly Ser Met Gly Val Ala Tyr Ser  
 35 40 45

Ser Val Val Met Tyr Val Leu Leu Trp Val Pro Leu Pro Leu Pro Ser  
 50 55 60

His Phe Leu Pro Ser Gly Ala Pro Glu Ala Gln Pro Thr Thr Trp Ala  
 65 70 75 80

Gln Ser Pro His Ser Val Cys Lys Cys Gly Thr Xaa Leu Gly Pro Ala  
 85 90 95

Lys Pro Gln Gly Pro Ser Leu Pro Xaa Pro Pro Cys Leu Ile Met Leu  
 100 105 110

Leu Ser Cys Arg Arg Gln Leu Gly Leu Ala Pro Ser Xaa Trp Leu Pro  
 115 120 125

Gly Xaa Gly Ser His Gly Gly Glu Leu Arg Gly Cys Ser Gln Gly Trp  
 130 135 140

Ala Pro Gly Ile Ala His Leu Asn Ile Cys Thr

145

150

155

&lt;210&gt; 1841

&lt;211&gt; 42

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1841

Tyr Thr Phe Gln Cys Leu Ser Gln Thr Cys Ser Tyr Asp Ile Lys Cys  
 1 5 10 15

Tyr Phe Leu Val Ala Lys Ile Ile Leu Asp Ser Val Ile Lys Val Tyr  
 20 25 30

Trp Asn Leu Asn Phe Lys Met Ser Pro Asp  
 35 40

&lt;210&gt; 1842

&lt;211&gt; 265

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (22)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1842

Pro Lys Leu Glu Leu His Arg Gly Gly Gly Arg Ser Arg Thr Ser Gly  
 1 5 10 15

Ser Pro Gly Leu Gln Xaa Phe Gly Thr Arg Arg Thr Arg Gly Arg Ser  
 20 25 30

Gly Arg Ala Gln Gly Arg Leu Lys Arg Pro Gly Lys Leu Ala Cys Arg  
 35 40 45

Lys Phe Pro Gly Arg Arg Gln Arg Val Val Pro Glu Leu Thr Asp Val  
 50 55 60

Leu Met Asn Glu Ile Leu His Gly Ala Asp Gly Thr Ser Ile Lys Cys  
 65 70 75 80

Gly Ile Ile Gly Glu Ile Gly Cys Ser Trp Pro Leu Thr Glu Ser Glu  
 85 90 95

Arg Lys Val Leu Gln Ala Thr Ala His Ala Gln Ala Gln Leu Gly Cys  
 100 105 110

Pro Val Ile Ile His Pro Gly Arg Ser Ser Arg Ala Pro Phe Gln Ile  
 115 120 125

Ile Arg Ile Leu Gln Glu Ala Gly Ala Asp Ile Ser Lys Thr Val Met  
 130 135 140

Ser His Leu Asp Arg Thr Ile Leu Asp Lys Lys Glu Leu Leu Glu Phe

1185

145                      150                      155                      160  
 Ala Gln Leu Gly Cys Tyr Leu Glu Tyr Asp Leu Phe Gly Thr Glu Leu  
                                  165                      170                      175  
 Leu His Tyr Gln Leu Gly Pro Asp Ile Asp Met Pro Asp Asp Asn Lys  
                                  180                      185                      190  
 Arg Ile Arg Arg Val Arg Leu Leu Val Glu Glu Gly Cys Glu Asp Arg  
                                  195                      200                      205  
 Ile Leu Val Ala His Asp Ile His Thr Lys Thr Arg Leu Met Lys Tyr  
                                  210                      215                      220  
 Gly Gly His Gly Tyr Ser His Ile Leu Thr Asn Val Val Pro Lys Met  
 225                                   230                      235                      240  
 Leu Leu Arg Gly Ile Thr Glu Asn Val Leu Asp Lys Ile Leu Ile Glu  
                                  245                      250                      255  
 Asn Pro Lys Gln Trp Leu Thr Phe Lys  
                                  260                      265

&lt;210&gt; 1843

&lt;211&gt; 503

&lt;212&gt; .PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1843

Met Glu Gln Arg His Val Leu Leu Lys Gln Lys Glu Leu Gly Gly Glu  
   1                                    5                      10                      15  
 Glu Pro Glu Pro Ser Leu Arg Glu Gly Pro Gly Gly Leu Val Met Glu  
                                  20                      25                      30  
 Gly His Leu Phe Lys Arg Ala Ser Asn Ala Phe Lys Thr Trp Ser Arg  
                                  35                      40                      45  
 Arg Trp Phe Thr Ile Gln Ser Asn Gln Leu Val Tyr Gln Lys Lys Tyr  
                                  50                      55                      60  
 Lys Asp Pro Val Thr Val Val Val Asp Asp Leu Arg Leu Cys Thr Val  
                                  65                      70                      75                      80  
 Lys Leu Cys Pro Asp Ser Glu Arg Arg Phe Cys Phe Glu Val Val Ser  
                                  85                      90                      95  
 Thr Ser Lys Ser Cys Leu Leu Gln Ala Asp Ser Glu Arg Leu Leu Gln  
                                  100                      105                      110  
 Leu Trp Val Ser Ala Val Gln Ser Ser Ile Ala Ser Ala Phe Ser Gln  
                                  115                      120                      125  
 Ala Arg Leu Asp Asp Ser Pro Arg Gly Pro Gly Gln Gly Ser Gly His  
                                  130                      135                      140  
 Leu Ala Ile Gly Ser Ala Ala Thr Leu Gly Ser Gly Gly Met Ala Arg  
 145                                   150                      155                      160



Gly Arg Glu Pro Gly Gly Val Gly His Val Val Ala Gln Val Gln Ser  
 165 170 175  
 Val Asp Gly Asn Ala Gln Cys Cys Asp Cys Arg Glu Pro Ala Pro Glu  
 180 185 190  
 Trp Ala Ser Ile Asn Leu Gly Val Thr Leu Cys Ile Gln Cys Ser Gly  
 195 200 205  
 Ile His Arg Ser Leu Gly Val His Phe Ser Lys Val Arg Ser Leu Thr  
 210 215 220  
 Leu Asp Ser Trp Glu Pro Glu Leu Val Lys Leu Met Cys Glu Leu Gly  
 225 230 235 240  
 Asn Val Ile Ile Asn Gln Ile Tyr Glu Ala Arg Val Glu Ala Met Ala  
 245 250 255  
 Val Lys Lys Pro Gly Pro Ser Cys Ser Arg Gln Glu Lys Glu Ala Trp  
 260 265 270  
 Ile His Ala Lys Tyr Val Glu Lys Lys Phe Leu Thr Lys Leu Pro Glu  
 275 280 285  
 Ile Arg Gly Arg Arg Gly Gly Arg Gly Arg Pro Arg Gly Gln Pro Pro  
 290 295 300  
 Val Pro Pro Lys Pro Ser Ile Arg Pro Arg Pro Gly Ser Leu Arg Ser  
 305 310 315 320  
 Lys Pro Glu Pro Pro Ser Glu Asp Leu Gly Ser Leu His Pro Gly Ala  
 325 330 335  
 Leu Leu Phe Arg Ala Ser Gly His Pro Pro Ser Leu Pro Thr Met Ala  
 340 345 350  
 Asp Ala Leu Ala His Gly Ala Asp Val Asn Trp Val Asn Gly Gly Gln  
 355 360 365  
 Asp Asn Ala Thr Pro Leu Ile Gln Ala Thr Ala Ala Asn Ser Leu Leu  
 370 375 380  
 Ala Cys Glu Phe Leu Leu Gln Asn Gly Ala Asn Val Asn Gln Ala Asp  
 385 390 395 400  
 Ser Ala Gly Arg Gly Pro Leu His His Ala Thr Ile Leu Gly His Thr  
 405 410 415  
 Gly Leu Ala Cys Leu Phe Leu Lys Arg Gly Ala Asp Leu Gly Ala Arg  
 420 425 430  
 Asp Ser Glu Gly Arg Asp Pro Leu Thr Ile Ala Met Glu Thr Ala Asn  
 435 440 445  
 Ala Asp Ile Val Thr Leu Leu Arg Leu Ala Lys Met Arg Glu Ala Glu  
 450 455 460  
 Ala Ala Gln Gly Gln Ala Gly Asp Glu Thr Tyr Leu Asp Ile Phe Arg  
 465 470 475 480

Asp Phe Ser Leu Met Ala Ser Asp Asp Pro Glu Lys Leu Ser Arg Arg  
485 490 495

Ser His Asp Leu His Thr Leu  
500

<210> 1844

<211> 25

<212> PRT

<213> Homo sapiens

<400> 1844

Met Ser Pro Ser Ile Arg Ile Leu Leu Val Leu Gln Gln Leu Gly Ser  
1 5 10 15

Leu Met Ala Pro Leu Pro Ser Ala His  
20 25

<210> 1845

<211> 25

<212> PRT

<213> Homo sapiens

<400> 1845

Met Ser Pro Ser Ile Arg Ile Leu Leu Val Leu Gln Gln Leu Gly Ser  
1 5 10 15

Leu Met Ala Pro Leu Pro Ser Ala His  
20 25

<210> 1846

<211> 6

<212> PRT

<213> Homo sapiens

<400> 1846

Val Phe Gln Ile Tyr Leu  
1 5

<210> 1847

<211> 6

<212> PRT

<213> Homo sapiens

<400> 1847

Val Phe Gln Ile Tyr Leu  
1 5

<210> 1848

<211> 107  
 <212> PRT  
 <213> Homo sapiens

<400> 1848

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Met Leu Val Leu Leu Leu Asp Phe Leu Gly Leu Val His Leu Gly Gln
 1             5             10             15
Leu Leu Ile Phe His Ile Tyr Leu Lys Ala Lys Lys Met Thr Thr Phe
          20             25             30
Glu Tyr Leu Ile Asn Asn Arg Lys Glu Glu Ser Ser Lys His Gln Ala
          35             40             45
Val Arg Lys Asp Pro Tyr Val Gln Met Asp Lys Gly Val Leu Gln Gln
          50             55             60
Gly Ala Gly Ala Leu Gly Ser Ser Ala Gln Gly Val Lys Ala Lys Ser
 65             70             75             80
Ser Leu Leu Ile His Lys His Leu Cys His Phe Cys Thr Ser Val Asn
          85             90             95
Gln Asp Gly Asp Ser Thr Ala Arg Val His Leu
          100             105

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<210> 1849  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 1849

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Met Leu Gln Ala Arg Asn Gln Ser Pro Ser Ser Gln Arg Pro Leu Asp
 1             5             10             15
Val Leu Arg Arg Asn Gln Asp Pro Gln Ser Pro Ala Ser Ile Ser Val
          20             25             30
Ile Ile Phe Ile Thr Pro Lys Glu Glu Pro Ala Leu Gln Glu Gly Leu
          35             40             45
His Leu Gln Glu Asp Gly Leu Pro Ala Thr Ala Glu Asp Ala Ala Thr
          50             55             60
Cys Leu Thr Val Leu Ser Ser Gln Pro Ala Ser Cys Arg Ala Ser Cys
          65             70             75             80
Cys Leu Arg Ala Asp Gly Pro Gly Met Leu Ala His Thr Cys Glu His
          85             90             95
Ser Thr Gly Lys Trp Glu His Ser Thr Arg Lys Trp Glu His Ser Thr
          100             105             110
Gly Lys Trp Glu His Ser Thr Gly Lys Trp Gly Leu Thr Ala Leu Gln
          115             120             125
Asn Gly Ser Thr Val Leu Gly Asn Gly Ser Thr Val Leu Gly Ser Gly
          130             135             140

```

Ser Thr Val Leu Arg Ser Gly Ser Thr Val Leu Arg Asn Gly Ser Thr  
 145 150 155 160

Leu Leu Arg Asn Gly Ser Thr Val Leu Gly Asn Gly His Thr Val Leu  
 165 170 175

Gly Asn Gly His Thr Val Leu Arg Asn Gly Ser Thr Val Leu Gly Asn  
 180 185 190

Gly Ser Thr Val Leu Gly Asn Gly Ser Pro Gln Tyr Trp Glu Arg Gly  
 195 200 205

Val His Ser Thr Arg Lys Trp Glu His Ser Thr Gly Lys Trp Glu His  
 210 215 220

Ser Thr Gly Lys Trp Glu His Ser Thr Gly Lys Pro Gln Thr Trp Ile  
 225 230 235 240

Leu Ser Phe Ser Ala  
 245

<210> 1850

<211> 209

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (136)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (161)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (169)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (197)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1850

Met Ala Met Gly Leu Phe Arg Val Cys Leu Val Val Val Thr Ala Ile  
 1 5 10 15

Ile Asn His Pro Leu Leu Phe Pro Arg Glu Asn Ala Thr Val Pro Glu  
 20 25 30

Asn Glu Glu Glu Ile Ile Arg Lys Met Gln Ala His Gln Glu Lys Leu  
 35 40 45

Gln Leu Glu Gln Leu Arg Leu Glu Glu Glu Val Ala Arg Leu Ala Ala

50                      55                      60  
 Glu Lys Glu Ala Leu Glu Gln Val Ala Glu Glu Gly Arg Gln Gln Asn  
 65                      70                      75                      80  
 Glu Thr Arg Val Ala Trp Asp Leu Trp Ser Thr Leu Cys Met Ile Leu  
                     85                      90                      95  
 Phe Leu Met Ile Glu Val Trp Arg Gln Asp His Gln Glu Gly Pro Ser  
                     100                      105                      110  
 Pro Glu Cys Leu Gly Gly Glu Glu Asp Glu Leu Pro Gly Trp Gly Ala  
                     115                      120                      125  
 Pro Pro Cys Arg Ala Ser Pro Xaa Pro Thr Arg His Ala Cys His Phe  
                     130                      135                      140  
 Tyr Glu Arg Cys Ile Arg Gly Ala Thr Ala Asp Ala Ala Arg Thr Arg  
 145                      150                      155                      160  
 Xaa Phe Leu Glu Gly Phe Val Asp Xaa Leu Leu Glu Ala Leu Arg Ser  
                     165                      170                      175  
 Leu Cys Asn Arg Asp Thr Asp Met Glu Val Glu Asp Phe Ile Gly Val  
                     180                      185                      190  
 Asp Ser Met Tyr Xaa Asn Trp Gln Val Asp Arg Pro Leu Leu Cys His  
                     195                      200                      205  
 Leu

<210> 1851  
 <211> 547  
 <212> PRT  
 <213> Homo sapiens

<400> 1851  
 Met Ala Met Gly Leu Phe Arg Val Cys Leu Val Val Val Thr Ala Ile  
   1                      5                      10                      15  
 Ile Asn His Pro Leu Leu Phe Pro Arg Glu Asn Ala Thr Val Pro Glu  
                     20                      25                      30  
 Asn Glu Glu Glu Ile Ile Arg Lys Met Gln Ala His Gln Glu Lys Leu  
                     35                      40                      45  
 Gln Leu Glu Gln Leu Arg Leu Glu Glu Glu Val Ala Arg Leu Ala Ala  
                     50                      55                      60  
 Glu Lys Glu Ala Leu Glu Gln Val Ala Glu Glu Gly Arg Gln Gln Asn  
                     65                      70                      75                      80  
 Glu Thr Arg Val Ala Trp Asp Leu Trp Ser Thr Leu Cys Met Ile Leu  
                     85                      90                      95  
 Phe Leu Met Ile Glu Val Trp Arg Gln Asp His Gln Glu Gly Pro Ser  
                     100                      105                      110

Pro Glu Cys Leu Gly Gly Glu Glu Asp Glu Leu Pro Gly Leu Gly Gly  
 115 120 125  
 Ala Pro Leu Gln Gly Leu Thr Leu Pro Asn Lys Ala Thr Leu Gly His  
 130 135 140  
 Phe Tyr Glu Arg Cys Ile Arg Gly Ala Thr Ala Asp Ala Ala Arg Thr  
 145 150 155 160  
 Arg Glu Phe Leu Glu Gly Phe Val Asp Asp Leu Leu Glu Ala Leu Arg  
 165 170 175  
 Ser Leu Cys Asn Arg Asp Thr Asp Met Glu Val Glu Asp Phe Ile Gly  
 180 185 190  
 Val Asp Ser Met Tyr Glu Asn Trp Gln Val Asp Arg Pro Leu Leu Cys  
 195 200 205  
 His Leu Phe Val Pro Phe Thr Pro Pro Glu Pro Tyr Arg Phe His Pro  
 210 215 220  
 Glu Leu Trp Cys Ser Gly Arg Ser Val Pro Leu Asp Arg Gln Gly Tyr  
 225 230 235 240  
 Gly Gln Ile Lys Val Val Arg Ala Asp Gly Asp Thr Leu Ser Cys Ile  
 245 250 255  
 Cys Gly Lys Thr Lys Leu Gly Glu Asp Met Leu Cys Leu Leu His Gly  
 260 265 270  
 Arg Asn Ser Met Ala Pro Pro Cys Gly Asp Met Glu Asn Leu Leu Cys  
 275 280 285  
 Ala Thr Asp Ser Leu Tyr Leu Asp Thr Met Gln Val Met Lys Trp Phe  
 290 295 300  
 Gln Thr Ala Leu Thr Arg Ala Trp Lys Gly Ile Ala His Lys Tyr Glu  
 305 310 315 320  
 Phe Asp Leu Ala Phe Gly Gln Leu Asp Ser Pro Gly Ser Leu Lys Ile  
 325 330 335  
 Lys Phe Arg Ser Gly Lys Phe Met Pro Phe Asn Leu Ile Pro Val Ile  
 340 345 350  
 Gln Cys Asp Asp Ser Asp Leu Tyr Phe Val Ser His Leu Pro Arg Glu  
 355 360 365  
 Pro Ser Glu Gly Thr Pro Ala Ser Ser Thr Asp Trp Leu Leu Ser Phe  
 370 375 380  
 Ala Val Tyr Glu Arg His Phe Leu Arg Thr Thr Leu Lys Ala Leu Pro  
 385 390 395 400  
 Glu Gly Ala Cys His Leu Ser Cys Leu Gln Ile Ala Ser Phe Leu Leu  
 405 410 415  
 Ser Lys Gln Ser Arg Leu Thr Gly Pro Ser Gly Leu Ser Ser Tyr His  
 420 425 430

Leu Lys Thr Ala Leu Leu His Leu Leu Leu Leu Arg Gln Ala Ala Asp  
 435 440 445  
 Trp Lys Ala Gly Gln Leu Asp Ala Arg Leu His Glu Leu Leu Cys Phe  
 450 455 460  
 Leu Glu Lys Ser Leu Leu Gln Lys Lys Leu His His Phe Phe Ile Gly  
 465 470 475 480  
 Asn Arg Lys Val Pro Glu Ala Met Gly Leu Pro Glu Ala Val Leu Arg  
 485 490 495  
 Ala Glu Pro Leu Asn Leu Phe Arg Pro Phe Val Leu Gln Arg Ser Leu  
 500 505 510  
 Tyr Arg Lys Thr Leu Asp Ser Phe Tyr Glu Met Leu Lys Asn Ala Pro  
 515 520 525  
 Ala Leu Ile Ser Glu Tyr Ser Leu His Val Pro Ser Asp Gln Pro Thr  
 530 535 540  
 Pro Lys Ser  
 545

<210> 1852  
 <211> 213  
 <212> PRT  
 <213> Homo sapiens

<400> 1852

Leu Leu Phe Leu Ser Leu Leu Gln Met Gln Glu Leu Leu Gly Arg Gly  
 1 5 10 15  
 Ala Trp Ala Pro Gly Cys Gly Arg Arg Pro Ser Gly Trp Gly Gln Leu  
 20 25 30  
 Ala Cys Pro Asp Pro Leu Leu Pro Pro His Asn Pro Lys Ser Pro Gln  
 35 40 45  
 Pro Gly Pro Ser Thr Ser Gly Val Trp Gly Glu Glu Gln Gly Leu Arg  
 50 55 60  
 Thr Leu Ser Ser Glu His Pro Trp Gln Gly Leu Gln Pro Leu Ile Ser  
 65 70 75 80  
 Ser Leu Lys Pro Cys Gly His Thr Ala Arg Arg Asp Leu Pro Leu Ala  
 85 90 95  
 Pro Ala Ser Phe Gln Pro Arg Val Leu Ile Gln Gly Pro Arg Thr Val  
 100 105 110  
 Pro Pro Val Leu Leu Cys Pro Gln His Lys Ala Arg Leu His Ser Gln  
 115 120 125  
 Lys Cys Ser Gln Ala Leu Glu Gly Asp Pro Ala Ser Ser Pro Thr Ala  
 130 135 140

Pro His Pro Thr His Pro Ser Ala Ala Pro Leu Leu Phe Pro Arg Asp  
 145 150 155 160

Leu Ser Tyr Thr Gly Gln Glu Ala Ala Glu Arg Val Ser Pro Pro Pro  
 165 170 175

Ser Lys Arg Ser Cys Ser Leu Cys Gln Asn Arg Val Trp Ala Gly Gly  
 180 185 190

Arg Ala Leu Gly Ala Arg Pro Leu Pro Leu Pro Ala Gly Phe Ser Trp  
 195 200 205

Ser Leu Cys Trp Lys  
 210

&lt;210&gt; 1853

&lt;211&gt; 179

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (91)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (140)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (169)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1853

Met Gly Met Gly Arg Gly Ala Gly Arg Ser Ala Leu Gly Phe Trp Pro  
 1 5 10 15

Thr Leu Ala Phe Leu Leu Cys Ser Phe Pro Ala Ala Thr Ser Pro Cys  
 20 25 30

Lys Ile Leu Lys Cys Asn Ser Glu Phe Trp Ser Ala Thr Ser Gly Ser  
 35 40 45

His Ala Pro Ala Ser Asp Asp Thr Pro Glu Phe Cys Ala Ala Leu Arg  
 50 55 60

Ser Tyr Ala Leu Cys Thr Arg Arg Thr Ala Arg Thr Cys Arg Gly Asp  
 65 70 75 80

Leu Ala Tyr His Ser Ala Val His Gly Ile Xaa Asp Leu Met Ser Gln  
 85 90 95

His Asn Cys Ser Lys Asp Gly Pro Thr Ser Gln Pro Arg Leu Arg Thr  
 100 105 110

Leu Pro Pro Ala Glu Thr Ala Arg Ser Ala Arg Thr Ala Pro Arg Ser



115	120	125
Ala Ile Thr Arg Arg Ala Phe Thr Ser Thr Arg Xaa Pro Pro Thr Thr		
130	135	140
Arg Thr Val Ala Ser Ser Gly Thr His Thr Phe Arg Thr Phe Thr Asp		
145	150	155
		160
Arg Phe Gln Thr Cys Lys Val Gln Xaa Arg Leu Ala Ala His Arg Gln		
	165	170
		175
Leu Ile Thr		

&lt;210&gt; 1854

&lt;211&gt; 357

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (140)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (325)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (329)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (335)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (338)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (339)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1854

Met Gly Met Gly Arg Gly Ala Gly Arg Ser Ala Leu Gly Phe Trp Pro
1 5 10 15

Thr Leu Ala Phe Leu Leu Cys Ser Phe Pro Ala Ala Thr Ser Pro Cys
20 25 30

Lys Ile Leu Lys Cys Asn Ser Glu Phe Trp Ser Ala Thr Ser Gly Ser
35 40 45

His Ala Pro Ala Ser Asp Asp Thr Pro Glu Phe Cys Ala Ala Leu Arg  
 50 55 60  
 Ser Tyr Ala Leu Cys Thr Arg Arg Thr Ala Arg Thr Cys Arg Gly Asp  
 65 70 75 80  
 Leu Ala Tyr His Ser Ala Val His Gly Ile Glu Asp Leu Met Ser Gln  
 85 90 95  
 His Asn Cys Ser Lys Asp Gly Pro Thr Ser Gln Pro Arg Leu Arg Thr  
 100 105 110  
 Leu Pro Pro Ala Gly Asp Ser Gln Glu Arg Ser Asp Ser Pro Glu Ile  
 115 120 125  
 Cys His Tyr Glu Lys Ser Phe His Lys His Ser Xaa Thr Pro Asn Tyr  
 130 135 140  
 Thr His Cys Gly Leu Phe Gly Asp Pro His Leu Arg Thr Phe Thr Asp  
 145 150 155 160  
 Arg Phe Gln Thr Cys Lys Val Gln Gly Ala Trp Pro Leu Ile Asp Asn  
 165 170 175  
 Asn Tyr Leu Asn Val Gln Val Thr Asn Thr Pro Val Leu Pro Gly Ser  
 180 185 190  
 Ala Ala Thr Ala Thr Ser Lys Leu Thr Ile Ile Phe Lys Asn Phe Gln  
 195 200 205  
 Glu Cys Val Asp Gln Lys Val Tyr Gln Ala Glu Met Asp Glu Leu Pro  
 210 215 220  
 Ala Ala Phe Val Asp Gly Ser Lys Asn Gly Gly Asp Lys His Gly Ala  
 225 230 235 240  
 Asn Ser Leu Lys Ile Thr Glu Lys Val Ser Gly Gln His Val Glu Ile  
 245 250 255  
 Gln Ala Lys Tyr Ile Gly Thr Thr Ile Val Val Arg Gln Val Gly Arg  
 260 265 270  
 Tyr Leu Thr Phe Ala Val Arg Met Pro Glu Glu Val Val Asn Ala Val  
 275 280 285  
 Glu Asp Trp Asp Ser Gln Gly Leu Tyr Leu Cys Leu Arg Gly Cys Pro  
 290 295 300  
 Leu Asn Gln Gln Ile Asp Phe Gln Ala Phe His Thr Asn Ala Glu Gly  
 305 310 315 320  
 Thr Gly Ala Arg Xaa Leu Ala Ala Xaa Ser Leu Asp Pro Gln Xaa Pro  
 325 330 335  
 Arg Xaa Xaa His Thr Arg Gln Ala Val Ala Lys Cys Lys Glu Lys Leu  
 340 345 350  
 Pro Val Glu Asp Leu  
 355

&lt;210&gt; 1855

&lt;211&gt; 434

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1855

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Met Gly Met Gly Arg Gly Ala Gly Arg Ser Ala Leu Gly Phe Trp Pro
 1           5           10           15

Thr Leu Ala Phe Leu Leu Cys Ser Phe Pro Ala Ala Thr Ser Pro Cys
          20           25           30

Lys Ile Leu Lys Cys Asn Ser Glu Phe Trp Ser Ala Thr Ser Gly Ser
          35           40           45

His Ala Pro Ala Ser Asp Asp Thr Pro Glu Phe Cys Ala Ala Leu Arg
          50           55           60

Ser Tyr Ala Leu Cys Thr Arg Arg Thr Ala Arg Thr Cys Arg Gly Asp
          65           70           75           80

Leu Ala Tyr His Ser Ala Val His Gly Ile Glu Asp Leu Met Ser Gln
          85           90           95

His Asn Cys Ser Lys Asp Gly Pro Thr Ser Gln Pro Arg Leu Arg Thr
          100          105          110

Leu Pro Pro Ala Gly Asp Ser Gln Glu Arg Ser Asp Ser Pro Glu Ile
          115          120          125

Cys His Tyr Glu Lys Ser Phe His Lys His Ser Ala Thr Pro Asn Tyr
          130          135          140

Thr His Cys Gly Leu Phe Gly Asp Pro His Leu Arg Thr Phe Thr Asp
          145          150          155          160

Arg Phe Gln Thr Cys Lys Val Gln Gly Ala Trp Pro Leu Ile Asp Asn
          165          170          175

Asn Tyr Leu Asn Val Gln Val Thr Asn Thr Pro Val Leu Pro Gly Ser
          180          185          190

Ala Ala Thr Ala Thr Ser Lys Leu Thr Ile Ile Phe Lys Asn Phe Gln
          195          200          205

Glu Cys Val Asp Gln Lys Val Tyr Gln Ala Glu Met Asp Glu Leu Pro
          210          215          220

Ala Ala Phe Val Asp Gly Ser Lys Asn Gly Gly Asp Lys His Gly Ala
          225          230          235          240

Asn Ser Leu Lys Ile Thr Glu Lys Val Ser Gly Gln His Val Glu Ile
          245          250          255

Gln Ala Lys Tyr Ile Gly Thr Thr Ile Val Val Arg Gln Val Gly Arg
          260          265          270

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Tyr Leu Thr Phe Ala Val Arg Met Pro Glu Glu Val Val Asn Ala Val  
 275 280 285  
 Glu Asp Trp Asp Ser Gln Gly Leu Tyr Leu Cys Leu Arg Gly Cys Pro  
 290 295 300  
 Leu Asn Gln Gln Ile Asp Phe Gln Ala Phe His Thr Asn Ala Glu Gly  
 305 310 315 320  
 Thr Gly Ala Arg Arg Leu Ala Ala Ala Ser Pro Ala Pro Thr Ala Pro  
 325 330 335  
 Glu Thr Phe Pro Tyr Glu Thr Ala Val Ala Lys Cys Lys Glu Lys Leu  
 340 345 350  
 Pro Val Glu Asp Leu Tyr Tyr Gln Ala Cys Val Phe Asp Leu Leu Thr  
 355 360 365  
 Thr Gly Asp Val Asn Phe Thr Leu Ala Ala Tyr Tyr Ala Leu Glu Asp  
 370 375 380  
 Val Lys Met Leu His Ser Asn Lys Asp Lys Leu His Leu Tyr Glu Arg  
 385 390 395 400  
 Thr Arg Asp Leu Pro Gly Arg Ala Ala Ala Gly Leu Pro Leu Ala Pro  
 405 410 415  
 Arg Pro Leu Leu Gly Ala Leu Val Pro Leu Leu Ala Leu Leu Pro Val  
 420 425 430

Phe Cys

<210> 1856  
 <211> 712  
 <212> PRT  
 <213> Homo sapiens

<400> 1856  
 Met Gly Gln Gly Leu Lys Ala Trp Pro Arg Tyr Arg Val Val Gly Ser  
 1 5 10 15  
 Ala Asp Ala Gly Gln Tyr Asn Leu Glu Ile Thr Asp Ala Glu Leu Ser  
 20 25 30  
 Asp Asp Ala Ser Tyr Glu Cys Gln Ala Thr Glu Ala Ala Leu Arg Ser  
 35 40 45  
 Arg Arg Ala Lys Leu Thr Val Leu Ile Pro Pro Glu Asp Thr Arg Ile  
 50 55 60  
 Asp Gly Gly Pro Val Ile Leu Leu Gln Ala Gly Thr Pro His Asn Leu  
 65 70 75 80  
 Thr Cys Arg Ala Phe Asn Ala Lys Pro Ala Ala Thr Ile Ile Trp Phe  
 85 90 95  
 Arg Asp Gly Thr Gln Gln Glu Gly Ala Val Ala Ser Thr Glu Leu Leu

100					105					110					
Lys	Asp	Gly	Lys	Arg	Glu	Thr	Thr	Val	Ser	Gln	Leu	Leu	Ile	Asn	Pro
		115						120					125		
Thr	Asp	Leu	Asp	Ile	Gly	Arg	Val	Phe	Thr	Cys	Arg	Ser	Met	Asn	Glu
	130					135					140				
Ala	Ile	Pro	Ser	Gly	Lys	Glu	Thr	Ser	Ile	Glu	Leu	Asp	Val	His	His
145					150					155					160
Pro	Pro	Thr	Val	Thr	Leu	Ser	Ile	Glu	Pro	Gln	Thr	Val	Gln	Glu	Gly
				165					170					175	
Glu	Arg	Val	Val	Phe	Thr	Cys	Gln	Ala	Thr	Ala	Asn	Pro	Glu	Ile	Leu
			180					185					190		
Gly	Tyr	Arg	Trp	Ala	Lys	Gly	Gly	Phe	Leu	Ile	Glu	Asp	Ala	His	Glu
		195					200					205			
Ser	Arg	Tyr	Glu	Thr	Asn	Val	Asp	Tyr	Ser	Phe	Phe	Thr	Glu	Pro	Val
	210					215					220				
Ser	Cys	Glu	Val	His	Asn	Lys	Val	Gly	Ser	Thr	Asn	Val	Ser	Thr	Leu
225					230					235					240
Val	Asn	Val	His	Phe	Ala	Pro	Arg	Ile	Val	Val	Asp	Pro	Lys	Pro	Thr
				245					250					255	
Thr	Thr	Asp	Ile	Gly	Ser	Asp	Val	Thr	Leu	Thr	Cys	Val	Trp	Val	Gly
			260					265					270		
Asn	Pro	Pro	Leu	Thr	Leu	Thr	Trp	Thr	Lys	Lys	Asp	Ser	Asn	Met	Gly
		275					280					285			
Pro	Arg	Pro	Pro	Gly	Ser	Pro	Pro	Glu	Ala	Ala	Leu	Ser	Ala	Gln	Val
	290					295					300				
Leu	Ser	Asn	Ser	Asn	Gln	Leu	Leu	Leu	Lys	Ser	Val	Thr	Gln	Ala	Asp
305					310					315					320
Ala	Gly	Thr	Tyr	Thr	Cys	Arg	Ala	Ile	Val	Pro	Arg	Ile	Gly	Val	Ala
				325					330					335	
Glu	Arg	Glu	Val	Pro	Leu	Tyr	Val	Asn	Gly	Pro	Pro	Ile	Ile	Ser	Ser
			340					345					350		
Glu	Ala	Val	Gln	Tyr	Ala	Val	Arg	Gly	Asp	Gly	Gly	Lys	Val	Glu	Cys
		355					360					365			
Phe	Ile	Gly	Ser	Thr	Pro	Pro	Pro	Asp	Arg	Ile	Ala	Trp	Ala	Trp	Lys
	370					375					380				
Glu	Asn	Phe	Leu	Glu	Val	Gly	Thr	Leu	Glu	Arg	Tyr	Thr	Val	Glu	Arg
385					390					395					400
Thr	Asn	Ser	Gly	Ser	Gly	Val	Leu	Ser	Thr	Leu	Thr	Ile	Asn	Asn	Val
				405					410					415	
Met	Glu	Ala	Asp	Phe	Gln	Thr	His	Tyr	Asn	Cys	Thr	Ala	Trp	Asn	Ser

420	425	430
Phe Gly Pro Gly Thr Ala Ile Ile Gln Leu Glu Glu Arg Glu Val Leu 435 440 445		
Pro Val Gly Ile Ile Ala Gly Ala Thr Ile Gly Ala Ser Ile Leu Leu 450 455 460		
Ile Phe Phe Phe Ile Ala Leu Val Phe Phe Leu Tyr Arg Arg Arg Lys 465 470 475 480		
Gly Ser Arg Lys Asp Val Thr Leu Arg Lys Leu Asp Ile Lys Val Glu 485 490 495		
Thr Val Asn Arg Glu Pro Leu Thr Met His Ser Asp Arg Glu Asp Asp 500 505 510		
Thr Ala Ser Val Ser Thr Ala Thr Arg Val Met Lys Ala Ile Tyr Ser 515 520 525		
Ser Phe Lys Asp Asp Val Asp Leu Lys Gln Asp Leu Arg Cys Asp Thr 530 535 540		
Ile Asp Thr Arg Glu Glu Tyr Glu Met Lys Asp Pro Thr Asn Gly Tyr 545 550 555 560		
Tyr Asn Val Arg Ala His Glu Asp Arg Pro Ser Ser Arg Ala Val Leu 565 570 575		
Tyr Ala Asp Tyr Arg Ala Pro Gly Pro Ala Arg Phe Asp Gly Arg Pro 580 585 590		
Ser Ser Arg Leu Ser His Ser Ser Gly Tyr Ala Gln Leu Asn Thr Tyr 595 600 605		
Ser Arg Gly Pro Ala Ser Asp Tyr Gly Pro Glu Pro Thr Pro Pro Gly 610 615 620		
Pro Ala Ala Pro Ala Gly Thr Asp Thr Thr Ser Gln Leu Ser Tyr Glu 625 630 635 640		
Asn Tyr Glu Lys Phe Asn Ser His Pro Phe Pro Gly Ala Ala Gly Tyr 645 650 655		
Pro Thr Tyr Arg Leu Gly Tyr Pro Gln Ala Pro Pro Ser Gly Leu Glu 660 665 670		
Arg Thr Pro Tyr Glu Ala Tyr Asp Pro Ile Gly Lys Tyr Ala Thr Ala 675 680 685		
Thr Arg Phe Ser Tyr Thr Ser Gln His Ser Asp Tyr Gly Gln Arg Phe 690 695 700		
Gln Gln Arg Met Gln Thr His Val 705 710		

&lt;210&gt; 1857

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1857

Met Thr Ala Leu Met Ala Leu Val Met His Arg Leu Ala Leu Tyr Val  
 1 5 10 15

Cys Val Leu Ser Thr Thr Ala Ala Leu Arg Gly Arg Asp Glu Ala Leu  
 20 25 30

Gly Gly Glu Ala Ala Cys Leu Val Val Phe Trp Gly Pro His Ser His  
 35 40 45

Asp Ile Glu Arg Gln Gly Gln Glu Gly Thr Gly Leu Asp Leu Arg Leu  
 50 55 60

Ala Pro Gln Cys Ala Lys Asp Ser Val Thr Val Ser Arg Ser Cys Ser  
 65 70 75 80

Val

&lt;210&gt; 1858

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1858

Met Thr Ala Leu Met Ala Leu Val Met His Arg Leu Ala Leu Tyr Val  
 1 5 10 15

Cys Val Leu Ser Thr Thr Ala Ala Leu Arg Gly Arg Asp Glu Ala Leu  
 20 25 30

Gly Gly Glu Ala Ala Cys Leu Val Val Phe Trp Gly Pro His Ser His  
 35 40 45

Asp Ile Glu Arg Gln Gly Gln Glu Gly Thr Gly Leu Asp Leu Arg Leu  
 50 55 60

Ala Pro Gln Cys Ala Lys Asp Ser Val Thr Val Ser Arg Ser Cys Ser  
 65 70 75 80

Val

&lt;210&gt; 1859

&lt;211&gt; 104

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1859

Met Tyr Trp Gly Ile Phe Phe Ser Ile Leu Asn Phe Leu Ala Phe Phe  
 1 5 10 15

Ser Leu Val Leu Ile Ser Val Leu Leu Trp Thr Gly Met Val Val Phe

20 25 30  
 Arg Ser Leu Asp Pro Gly Ala Glu Leu Val Gly Phe Glu Ser His Leu  
 35 40 45  
 Tyr His Cys Cys Val Thr Ser Gly Asn Leu Pro Asn Phe Pro Gly Pro  
 50 55 60  
 Gln Phe Ser Tyr Ile Glu Asn Gly Asn Asn Lys Ser Ile Cys Phe Ile  
 65 70 75 80  
 Gly Leu Leu Arg Glu Phe Ala Asn Ser Ile Tyr Ala Asn Leu Leu Asp  
 85 90 95  
 Gln Cys Leu Ala His Asn Ser Gln  
 100

<210> 1860  
 <211> 104  
 <212> PRT  
 <213> Homo sapiens

<400> 1860  
 Met Tyr Trp Gly Ile Phe Phe Ser Ile Leu Asn Phe Leu Ala Phe Phe  
 1 5 10 15  
 Ser Leu Val Leu Ile Ser Val Leu Leu Trp Thr Gly Met Val Val Phe  
 20 25 30  
 Arg Ser Leu Asp Pro Gly Ala Glu Leu Val Gly Phe Glu Ser His Leu  
 35 40 45  
 Tyr His Cys Cys Val Thr Ser Gly Asn Leu Pro Asn Phe Pro Gly Pro  
 50 55 60  
 Gln Phe Ser Tyr Ile Glu Asn Gly Asn Asn Lys Ser Ile Cys Phe Ile  
 65 70 75 80  
 Gly Leu Leu Arg Glu Phe Ala Asn Ser Ile Tyr Ala Asn Leu Leu Asp  
 85 90 95  
 Gln Cys Leu Ala His Asn Ser Gln  
 100

<210> 1861  
 <211> 75  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (23)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE



&lt;222&gt; (36)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (44)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1861

Met	Ala	Ser	Tyr	Lys	Thr	Leu	Lys	Met	Leu	Phe	Ser	Cys	Leu	Leu	Thr
1				5					10					15	

Cys	Ser	Val	Ser	Asn	Glu	Xaa	Tyr	Ala	Val	Ile	Phe	Asn	Phe	Phe	Pro
			20					25					30		

Leu	Tyr	Ile	Xaa	Phe	Leu	Ser	Asp	Cys	Phe	Lys	Xaa	Phe	Ser	Leu	Ser
		35					40					45			

Leu	Val	Leu	Ser	Asn	Leu	Ile	Ile	Ile	Tyr	Leu	Gly	Val	Ile	Phe	Phe
	50					55					60				

Ile	Phe	Phe	Val	Leu	Asp	Ile	His	Arg	Ser	Ser
65					70				75	

&lt;210&gt; 1862

&lt;211&gt; 72

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (1)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (10)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (11)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1862

Xaa	Tyr	Thr	Phe	Val	Asn	Ser	Arg	Ser	Xaa	Xaa	Leu	Ile	Asp	Phe	Leu
1				5					10					15	

Cys	Val	Ile	Met	Gly	His	Leu	Phe	Leu	Val	His	Phe	Met	Pro	Asp	Ile
			20					25					30		

Leu	Lys	Phe	Lys	Thr	Lys	Tyr	Cys	Glu	Phe	Tyr	Leu	Val	Leu	Cys	Trp
		35					40					45			

Ile	Phe	Phe	Val	Phe	Leu	Ser	Thr	Ile	Met	Ser	Phe	Leu	Leu	Gly	Cys
	50					55					60				

Ser	Tyr	Ser	His	Trp	Lys	Gln	Phe
-----	-----	-----	-----	-----	-----	-----	-----

65

70

&lt;210&gt; 1863

&lt;211&gt; 75

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1863

Met	Ala	Ser	Tyr	Lys	Thr	Leu	Lys	Met	Leu	Phe	Ser	Cys	Leu	Leu	Thr
1				5					10					15	

Cys	Ser	Val	Ser	Asn	Glu	Gln	Tyr	Ala	Val	Ile	Phe	Asn	Phe	Phe	Pro
			20					25					30		

Leu	Tyr	Ile	Cys	Phe	Leu	Ser	Asp	Cys	Phe	Lys	Cys	Phe	Ser	Leu	Ser
		35					40					45			

Leu	Val	Leu	Ser	Asn	Leu	Ile	Ile	Ile	Tyr	Leu	Gly	Val	Ile	Phe	Phe
	50					55					60				

Ile	Phe	Phe	Val	Leu	Asp	Ile	His	Arg	Ser	Ser
65					70				75	

&lt;210&gt; 1864

&lt;211&gt; 63

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (37)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1864

Met	Arg	Leu	Cys	Gln	Arg	Pro	Gly	Leu	Val	Leu	Ala	Leu	Pro	Pro	Gln
1				5					10					15	

Leu	Ser	Phe	Ser	Thr	Ala	Arg	Gly	Gly	Asp	Ser	Arg	Met	Leu	Gly	Leu
			20					25					30		

Pro	Leu	Gly	Arg	Xaa	Thr	Ser	Gly	Lys	Val	Gln	Gly	Asp	Ser	Thr	Thr
		35					40					45			

Val	Lys	Leu	Arg	Phe	Gly	Leu	Gln	Leu	Gly	Val	Leu	Gly	Gln	Arg
	50					55				60				

&lt;210&gt; 1865

&lt;211&gt; 157

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1865

Gly	Gln	Arg	Gly	Arg	Pro	Ala	Ala	Thr	Ser	His	Arg	Ile	Leu	Ser	Ser
1				5					10					15	

His Ser Leu Ala Ser Gly Cys Pro Val Phe Arg Gly Gly Glu Gly Thr  
                   20                                  25                                  30  
 Gly Ala Arg Ser Thr Pro Leu Ala Leu Leu Leu Asp Pro Lys Ala Arg  
                   35                                  40                                  45  
 Pro Asp Pro Phe Ile Pro Trp Gly Ala Pro Ala Ser Ala Ile Gly Met  
                   50                                  55                                  60  
 Arg Ser Leu Lys Ser Leu His Lys Gln Val Arg Asp Pro Pro Thr Cys  
                   65                                  70                                  75                                  80  
 Arg Ser Trp Ala Thr Pro Arg Ala Ile Pro Arg Gly Cys Gly Arg Thr  
                                   85                                  90                                  95  
 Gln Pro Pro Thr Asp Arg Arg Pro Glu Ser Ser Glu Gly Ala Ile Pro  
                   100                                  105                                  110  
 Ile Pro Thr Ser Gly Glu Ala Arg Thr Ala Ile Val Ala Ser Gly Lys  
                   115                                  120                                  125  
 Thr Gln Leu Glu Pro Asn Gly Pro Cys Pro His Cys Asn Cys Ala Glu  
                   130                                  135                                  140  
 Asn Val Ser Gln Met Thr Gln Ile Gly Ser Tyr Phe Phe  
                   145                                  150                                  155

&lt;210&gt; 1866

&lt;211&gt; 47

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1866

Met Arg Leu Cys Gln Arg Pro Gly Leu Val Leu Ala Leu Pro Pro Gln  
   1                                  5                                  10                                  15  
 Leu Ser Phe Ser Thr Ala Arg Gly Gly Asp Ser Arg Met Leu Gly Leu  
                   20                                  25                                  30  
 Pro Leu Gly Arg Gly Thr Leu Glu Gly Gln Gly Asp Pro Gln Leu  
                   35                                  40                                  45

&lt;210&gt; 1867

&lt;211&gt; 89

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1867

Met Leu Ser Trp Leu Leu His Phe Tyr Phe Leu Thr Leu Ile Leu Met  
   1                                  5                                  10                                  15  
 Asn Lys Ala Ser Leu Met Asn Gln Leu Lys Ser Cys Lys Asn Val Phe  
                   20                                  25                                  30  
 Lys Met Cys Ala Phe Tyr Tyr Leu Ser Val Tyr Val Leu Gly Glu Met

35                                      40                                      45  
 Gly Ser Asn Arg Ser Leu Cys Pro Asp Val Gln Asp Ala Cys Tyr His  
     50                                      55                                      60  
 Thr His Lys Cys Leu Ile Leu Val Phe Met Trp Pro Leu Ser Pro Val  
     65                                      70                                      75                                      80  
 Asp Phe Pro Leu Met Cys Phe Leu Leu  
                                     85

<210> 1868  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens

<400> 1868  
 Met Leu Ser Trp Leu Leu His Phe Tyr Phe Leu Thr Leu Ile Leu Met  
     1                                      5                                      10                                      15  
 Asn Lys Ala Ser Leu Met Asn Gln Leu Lys Ser Cys Lys Asn Val Phe  
                                     20                                      25                                      30  
 Lys Met Cys Ala Phe Tyr Tyr Leu Ser Val Tyr Val Leu Gly Glu Met  
                                     35                                      40                                      45  
 Gly Ser Asn Arg Ser Leu Cys Pro Asp Val Gln Asp Ala Cys Tyr His  
     50                                      55                                      60  
 Thr His Lys Cys Leu Ile Leu Val Phe Met Trp Pro Leu Ser Pro Val  
     65                                      70                                      75                                      80  
 Asp Phe Pro Leu Met Cys Phe Leu Leu  
                                     85

<210> 1869  
 <211> 93  
 <212> PRT  
 <213> Homo sapiens

<400> 1869  
 Met Leu Ile Ser Lys Gly Val Gln Leu Leu Cys Lys Ala Val Tyr Pro  
     1                                      5                                      10                                      15  
 Ser His Leu Trp Ser Phe Leu Val Leu Leu Phe Thr Val Met Lys Thr  
                                     20                                      25                                      30  
 Glu Pro Val Ser Ala Leu Gly Cys Gly Asp Gln Cys His Gln Ser Leu  
                                     35                                      40                                      45  
 Leu Leu Arg Asp Tyr Pro Leu Ala Asn Ile Pro Ile Cys Gly Trp Ala  
     50                                      55                                      60  
 Trp Arg Val Tyr Leu Phe Leu Gly Cys Val Cys Ile Cys Val Cys Val  
     65                                      70                                      75                                      80

Cys Val Cys Val Phe Asn Ser Ser Val Cys Lys Leu Phe  
                   85                                  90

<210> 1870

<211> 304

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (98)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (166)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (231)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1870

Met Ser Ser Ser Glu Met Trp Thr Val Leu Trp His Arg Phe Ser Met  
   1                  5                          10                  15

Val Leu Arg Leu Pro Glu Glu Ala Ser Ala Gln Glu Gly Glu Leu Ser  
                   20                          25                  30

Leu Ser Ser Pro Pro Ser Pro Glu Pro Asp Trp Thr Leu Ile Ser Pro  
           35                          40                  45

Gln Gly Ile Phe Leu Ser His Gly Ser Ile Leu Met Ser Ile Leu Lys  
   50                          55                  60

His Leu Leu Cys Pro Ser Phe Leu Asn Gln Leu Arg Gln Ala Pro His  
   65                          70                  75                  80

Gly Ser Glu Phe Leu Pro Val Val Val Leu Ser Val Cys Gln Leu Leu  
                   85                          90                  95

Cys Xaa Pro Phe Ala Leu Asp Met Asp Ala Asp Leu Leu Ile Asp Val  
                   100                          105                  110

Leu Ala Asp Leu Arg Asp Ser Glu Val Ala Ala His Leu Leu Gln Val  
           115                          120                  125

Cys Cys Tyr His Leu Pro Leu Met Gln Val Glu Leu Pro Ile Ser Leu  
   130                          135                  140

Leu Thr Arg Leu Ala Leu Met Asp Pro Thr Ser Leu Asn Gln Phe Val  
   145                  150                  155                  160

Asn Thr Val Ser Ala Xaa Pro Arg Thr Ile Val Ser Phe Leu Ser Val  
                   165                          170                  175

Ala Leu Leu Ser Asp Gln Pro Leu Leu Thr Ser Asp Leu Leu Ser Leu

180							185					190				
Leu	Ala	His	Thr	Ala	Arg	Val	Leu	Ser	Pro	Ser	His	Leu	Ser	Phe	Ile	
		195						200					205			
Gln	Glu	Leu	Leu	Ala	Gly	Ser	Asp	Glu	Ser	Tyr	Arg	Pro	Leu	Arg	Ser	
	210					215					220					
Ser	Trp	Ala	Thr	Gln	Arg	Xaa	Leu	Cys	Gly	His	Thr	Leu	Ile	Gly	Ser	
225					230					235					240	
Trp	Asp	Thr	Cys	Ser	Asn	Thr	Ala	Trp	Pro	Cys	Val	Gly	His	Cys	Arg	
				245					250					255		
Ala	Ser	Leu	Asp	Cys	Ser	Ala	Phe	Cys	Cys	Leu	Gly	Leu	Glu	Thr	Arg	
			260					265					270			
Ile	Leu	Leu	Cys	Gly	Ala	Val	Pro	Ala	Leu	Leu	Trp	Ala	Met	Gln	Pro	
		275						280					285			
Thr	Arg	Leu	Val	Leu	Trp	Asp	Leu	Pro	Trp	Gln	Leu	Gln	Cys	Pro	Val	
	290					295					300					

<210> 1871

<211> 91

<212> PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

<222> (54)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

<221> SITE

$\langle 222 \rangle$  (71)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

<221> SITE

<222> (89)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1871

Met Ala Val Met Cys Val Ala Gly Leu Phe Phe Ile Pro Val Ala Gly  
1 5 10 15

Leu Thr Gly Phe His Val Val Leu Val Ala Arg Gly Arg Thr Thr Asn  
20 25 30

Glu Gln Val Thr Gly Lys Phe Arg Gly Gly Val Asn Pro Phe Thr Asn  
35 40 45

Gly Cys Cys Asn Asn Xaa Ser Arg Val Leu Cys Ser Ser Pro Ala Pro  
50 55 60

Arg Tyr Leu Gly Arg Pro Xaa Lys Glu Lys Thr Ile Val Ile Arg Pro  
 65 70 75 80

Pro Phe Leu Arg Pro Arg Ser Phe Xaa Trp Ala  
 85 90

<210> 1872

<211> 210

<212> PRT

<213> Homo sapiens

<400> 1872

Met Ala Val Met Cys Val Ala Gly Leu Phe Phe Ile Pro Val Ala Gly  
 1 5 10 15

Leu Thr Gly Phe His Val Val Leu Val Ala Arg Gly Arg Thr Thr Asn  
 20 25 30

Glu Gln Val Thr Gly Lys Phe Arg Gly Gly Val Asn Pro Phe Thr Asn  
 35 40 45

Gly Cys Cys Asn Asn Val Ser Arg Val Leu Cys Ser Ser Pro Ala Pro  
 50 55 60

Arg Tyr Leu Gly Arg Pro Lys Lys Glu Lys Thr Ile Val Ile Arg Pro  
 65 70 75 80

Pro Phe Leu Arg Pro Glu Val Ser Asp Gly Gln Ile Thr Val Lys Ile  
 85 90 95

Met Asp Asn Gly Ile Gln Gly Glu Leu Arg Arg Thr Lys Ser Lys Gly  
 100 105 110

Ser Leu Glu Ile Thr Glu Ser Gln Ser Ala Asp Ala Glu Pro Pro Pro  
 115 120 125

Pro Pro Lys Pro Asp Leu Ser Arg Tyr Thr Gly Leu Arg Thr His Leu  
 130 135 140

Gly Leu Ala Thr Asn Glu Asp Ser Ser Leu Leu Ala Lys Asp Ser Pro  
 145 150 155 160

Pro Thr Pro Thr Met Tyr Lys Tyr Arg Pro Gly Tyr Ser Ser Ser Ser  
 165 170 175

Thr Ser Ala Ala Met Pro His Ser Ser Ser Ala Lys Val Leu Ser Thr  
 180 185 190

Leu Arg Gly Gly Val Ile Thr Cys Gln Leu Ala Arg His Ser Gly Ser  
 195 200 205

Phe Leu  
 210

<210> 1873

<211> 193  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (53)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1873

Met	Gly	Pro	Leu	Ser	Pro	Ala	Arg	Thr	Leu	Arg	Leu	Trp	Gly	Pro	Arg
1				5					10					15	
Ser	Leu	Gly	Val	Ala	Leu	Gly	Val	Phe	Met	Thr	Ile	Gly	Phe	Ala	Leu
			20					25					30		
Gln	Leu	Leu	Gly	Gly	Pro	Phe	Gln	Arg	Arg	Leu	Pro	Gly	Leu	Gln	Leu
		35					40					45			
Arg	Gln	Pro	Ser	Xaa	Pro	Ser	Leu	Arg	Pro	Ala	Leu	Pro	Ser	Cys	Pro
	50					55				60					
Pro	Arg	Gln	Arg	Leu	Val	Phe	Leu	Lys	Thr	His	Lys	Ser	Gly	Ser	Ser
65					70					75					80
Ser	Val	Leu	Ser	Leu	Leu	His	Arg	Tyr	Gly	Asp	Gln	His	Gly	Leu	Arg
				85					90					95	
Phe	Ala	Leu	Pro	Ala	Arg	Tyr	Gln	Phe	Gly	Tyr	Pro	Lys	Leu	Phe	Gln
			100					105					110		
Ala	Ser	Arg	Val	Lys	Gly	Tyr	Arg	Pro	Gln	Gly	Gly	Gly	Thr	Gln	Leu
			115				120					125			
Pro	Phe	His	Ile	Leu	Cys	His	His	Met	Arg	Phe	Asn	Leu	Lys	Glu	Val
	130					135					140				
Leu	Gln	Val	Met	Pro	Ser	Asp	Ser	Phe	Phe	Phe	Ser	Ile	Val	Arg	Asp
145					150					155					160
Pro	Ala	Ala	Leu	Ala	Arg	Ser	Ala	Phe	Ser	Tyr	Tyr	Lys	Ser	Thr	Ser
				165				170						175	
Ser	Ala	Phe	Arg	Lys	Ser	Pro	Ser	Leu	Ala	Ala	Phe	Leu	Ala	Asn	Pro
			180					185					190		

Arg

<210> 1874  
 <211> 461  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (28)  
 <223> Xaa equals any of the naturally occurring L-amino acids



<220>  
 <221> SITE  
 <222> (168)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (169)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (171)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (178)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (442)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1874  
 Met Thr Ile Gly Phe Ala Leu Gln Leu Leu Gly Gly Pro Phe Gln Arg  
 1 5 10 15  
 Arg Leu Pro Gly Leu Gln Leu Arg Gln Pro Ser Xaa Pro Ser Leu Arg  
 20 25 30  
 Pro Ala Leu Pro Ser Cys Pro Pro Arg Gln Arg Leu Val Phe Leu Lys  
 35 40 45  
 Thr His Lys Ser Gly Ser Ser Ser Val Leu Ser Leu Leu His Arg Tyr  
 50 55 60  
 Gly Asp Gln His Gly Leu Arg Phe Ala Leu Pro Ala Arg Tyr Gln Phe  
 65 70 75 80  
 Gly Tyr Pro Lys Leu Phe Gln Ala Ser Arg Val Lys Gly Tyr Arg Pro  
 85 90 95  
 Gln Gly Gly Gly Thr Gln Leu Pro Phe His Ile Leu Cys His His Met  
 100 105 110  
 Arg Phe Asn Leu Lys Glu Val Leu Gln Val Met Pro Ser Asp Ser Phe  
 115 120 125  
 Phe Phe Ser Ile Val Arg Asp Pro Ala Ala Leu Ala Arg Ser Ala Phe  
 130 135 140  
 Ser Tyr Tyr Lys Ser Thr Ser Ser Ala Phe Arg Lys Ser Pro Ser Leu  
 145 150 155 160  
 Ala Ala Phe Leu Ala Asn Pro Xaa Xaa Phe Xaa Arg Pro Gly Ala Arg  
 165 170 175

Gly Xaa His Tyr Ala Arg Asn Leu Leu Trp Phe Asp Phe Gly Leu Pro  
 180 185 190  
 Phe Pro Pro Glu Lys Arg Ala Lys Arg Gly Asn Ile His Pro Pro Arg  
 195 200 205  
 Asp Pro Asn Pro Pro Gln Leu Gln Val Leu Pro Ser Gly Ala Gly Pro  
 210 215 220  
 Arg Ala Gln Thr Leu Asn Pro Asn Ala Leu Ile His Pro Val Ser Thr  
 225 230 235 240  
 Val Thr Asp His Arg Ser Gln Ile Ser Ser Pro Ala Ser Phe Asp Leu  
 245 250 255  
 Gly Ser Ser Ser Phe Ile Gln Trp Gly Leu Ala Trp Leu Asp Ser Val  
 260 265 270  
 Phe Asp Leu Val Met Val Ala Glu Tyr Phe Asp Glu Ser Leu Val Leu  
 275 280 285  
 Leu Ala Asp Ala Leu Cys Trp Gly Leu Asp Asp Val Val Gly Phe Met  
 290 295 300  
 His Asn Ala Gln Ala Gly His Lys Gln Gly Leu Ser Thr Val Ser Asn  
 305 310 315 320  
 Ser Gly Leu Thr Ala Glu Asp Arg Gln Leu Thr Ala Arg Ala Arg Ala  
 325 330 335  
 Trp Asn Asn Leu Asp Trp Ala Leu Tyr Val His Phe Asn Arg Ser Leu  
 340 345 350  
 Trp Ala Arg Ile Glu Lys Tyr Gly Gln Gly Arg Leu Gln Thr Ala Val  
 355 360 365  
 Ala Glu Leu Arg Ala Arg Arg Glu Ala Leu Ala Lys His Cys Leu Val  
 370 375 380  
 Gly Gly Glu Ala Ser Asp Pro Lys Tyr Ile Thr Asp Arg Arg Phe Arg  
 385 390 395 400  
 Pro Phe Gln Phe Gly Ser Ala Lys Val Leu Gly Tyr Ile Leu Arg Ser  
 405 410 415  
 Gly Leu Ser Pro Gln Asp Gln Glu Glu Cys Glu Arg Leu Ala Thr Pro  
 420 425 430  
 Glu Leu Gln Tyr Lys Asp Lys Leu Asp Xaa Lys Gln Phe Pro Pro Thr  
 435 440 445  
 Val Ser Leu Pro Leu Lys Thr Ser Arg Pro Leu Ser Pro  
 450 455 460

&lt;210&gt; 1875

&lt;211&gt; 191

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1875

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Met Gly Pro Leu Ser Pro Ala Arg Thr Leu Arg Leu Trp Gly Pro Arg
 1           5           10           15

Ser Leu Gly Val Ala Leu Gly Val Phe Met Thr Ile Gly Phe Ala Leu
      20           25           30

Gln Leu Leu Gly Gly Pro Phe Gln Arg Arg Leu Pro Gly Leu Gln Leu
      35           40           45

Arg Gln Pro Ser Ala Pro Ser Leu Arg Pro Ala Leu Pro Ser Cys Pro
      50           55           60

Pro Arg Gln Arg Leu Val Phe Leu Lys Thr His Lys Ser Gly Ser Ser
      65           70           75           80

Ser Val Leu Ser Leu Leu His Arg Tyr Gly Asp Gln His Gly Leu Arg
      85           90           95

Phe Ala Leu Pro Ala Arg Tyr Gln Phe Gly Tyr Pro Lys Leu Phe Gln
      100          105          110

Ala Ser Arg Val Lys Gly Tyr Arg Pro Gln Gly Gly Gly Thr Gln Leu
      115          120          125

Pro Phe His Ile Leu Cys His His Met Arg Phe Asn Leu Lys Glu Val
      130          135          140

Leu Gln Val Met Pro Ser Asp Ser Phe Phe Phe Ser Ile Val Arg Asp
      145          150          155          160

Pro Ala Gly Leu Ala Arg Ser Ala Phe Ser Tyr Tyr Lys Ser Thr Ser
      165          170          175

Ser Thr Phe Arg Lys Ser Pro Ser Leu Ala Ala Phe Leu Ala Asn
      180          185          190

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&lt;210&gt; 1876

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (65)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1876

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Met Ala Pro Ala Ile Val Thr Leu Gly Leu Leu Leu Pro Leu Ala Pro
 1           5           10           15

Ala Asp Leu Cys Leu Pro Ala Leu Gly Ser Ser Arg Leu Pro Arg Gly
      20           25           30

Pro Pro Gln Leu Pro Ser Ile Pro Val Ser Gln Pro Leu Pro Arg Gly
      35           40           45

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Phe Leu Arg Glu His Pro Gln Pro His Lys Leu Gln Pro Ile Pro Pro  
 50 55 60

Xaa Ser Gln Lys Ala Leu Phe Leu Glu Pro Arg Arg Arg Leu Trp Pro  
 65 70 75 80

Pro Ser Pro

<210> 1877  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 1877  
 Met Ser Ile Pro Met Val Ser Val Leu Leu Cys Gln Ala Pro Leu Leu  
 1 5 10 15

Ile Gln Val Ala Leu Pro Arg Thr Val Ala Ile Arg Lys Lys Arg Leu  
 20 25 30

Cys Leu Val Asp Ser Ile Leu Gln Thr Trp His Leu Phe Asn Phe Phe  
 35 40 45

Leu Val Gly Phe Ile Phe Gln Ser Ile Phe Arg Phe Thr Ala Lys Leu  
 50 55 60

Ser Glu Ser Thr Glu Ile Ser His Leu Phe Phe Ala Pro Thr Gln Ala  
 65 70 75 80

Lys Pro His Leu Leu Pro Ile Ser Pro Thr Arg Glu Val His Leu Leu  
 85 90 95

<210> 1878  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<400> 1878  
 Met Ser Phe Arg Ser Glu Leu Ala Met Trp Phe Gln Ala Ala Leu Val  
 1 5 10 15

Ser Ser Leu Val Leu Pro Thr Pro Pro Gly Ser Gly Gly Thr Ser Arg  
 20 25 30

Arg Lys Lys Trp Ile Lys Ser Trp Arg Asp Phe Lys Gln Tyr Leu Thr  
 35 40 45

His Ser Ser Arg His Asp Ser His Gln Leu Arg Ser Ser Asn Ala Phe  
 50 55 60

Leu Phe Asp Ala Gln Glu Gly Pro Ser Ala Val Asp Ile Ala Lys Asp  
 65 70 75 80

Glu Ile Gln Arg Gln Arg  
85

<210> 1879

<211> 130

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (67)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1879

Met Leu Gln Thr Thr Leu Pro Ser Ser Gln Thr Val Ser Leu Cys Leu  
1 5 10 15

Trp Val Gly Ala Ser Gln Pro Pro Pro Ser Phe Leu Cys Cys Gln Leu  
20 25 30

Gln Val Phe Leu Cys Leu Leu His Thr Thr Arg Arg Cys Pro Ser Ala  
35 40 45

Leu Pro Ala Leu Val Arg Val Val Pro Val Ser His Cys Gln Thr Ser  
50 55 60

Trp Leu Xaa Cys Gly Asp Leu Phe Leu Cys Leu Arg Ser Phe Leu Arg  
65 70 75 80

Ser Val His Ser Ser Gly Val Ser Pro Cys Leu Glu Gln Ile Ala Ser  
85 90 95

Pro Phe Ser Thr Cys Leu Leu Lys Leu Trp Ser Thr Cys Asp Cys Lys  
100 105 110

Phe Ser Ala Ala Thr Pro Glu Pro Ser Ser Ser His Ser Phe Thr Phe  
115 120 125

Met Asp  
130

<210> 1880

<211> 96

<212> PRT

<213> Homo sapiens

<400> 1880

Met Leu Met Val Arg Leu Phe Asn Ser Phe Pro His Ala Leu Leu Ile  
1 5 10 15

Leu Phe Leu Trp Gly Glu Gln Ser Pro Leu Thr Lys Pro Cys Pro Thr  
20 25 30

His Trp Ala Pro Val Trp Met Val Pro Gly Pro Gln Val Leu Trp Gly  
35 40 45

Thr His Trp Gly Leu Pro Gly Asn His Phe Cys Arg Ile Arg Ser His  
 50 55 60

Thr Arg Arg Ala Gln Cys Pro Arg Glu Gly Pro Phe Pro Thr Thr Leu  
 65 70 75 80

Pro His Trp Gly Trp Val Thr Gly Thr Tyr Arg Gly Trp Cys Cys Leu  
 85 90 95

<210> 1881  
 <211> 122  
 <212> PRT  
 <213> Homo sapiens

<400> 1881  
 Met Leu Met Val Arg Leu Phe Asn Ser Phe Pro His Ala Leu Leu Ile  
 1 5 10 15

Leu Phe Leu Trp Gly Glu Gln Ser Pro Leu Thr Lys Pro Cys Pro Thr  
 20 25 30

His Trp Ala Pro Val Trp Met Val Pro Gly Pro Gln Val Leu Trp Gly  
 35 40 45

Thr His Trp Gly Leu Pro Gly Asn His Phe Cys Arg Ile Arg Ser His  
 50 55 60

Thr Arg Arg Ala Gln Cys Pro Arg Glu Gly Pro Phe Pro Thr Thr Leu  
 65 70 75 80

Pro His Trp Gly Trp Val Thr Gly Thr Tyr Arg Gly Trp Cys Cys Leu  
 85 90 95

Ala Ser Pro Ala Cys Gly Gly Ser Trp Val Leu Leu Pro Phe Gly Phe  
 100 105 110

Val Phe Tyr Leu Ser Gly Trp Ala Ser Phe  
 115 120

<210> 1882  
 <211> 122  
 <212> PRT  
 <213> Homo sapiens

<400> 1882  
 Met Leu Met Val Arg Leu Phe Asn Ser Phe Pro His Ala Leu Leu Ile  
 1 5 10 15

Leu Phe Leu Trp Gly Glu Gln Ser Pro Leu Thr Lys Pro Cys Pro Thr  
 20 25 30

His Trp Ala Pro Val Trp Met Val Pro Gly Pro Gln Val Leu Trp Gly

	35		40		45												
Thr	His	Trp	Gly	Leu	Pro	Gly	Asn	His	Phe	Cys	Arg	Ile	Arg	Ser	His		
	50					55					60						
Thr	Arg	Arg	Ala	Gln	Cys	Pro	Arg	Glu	Gly	Pro	Phe	Pro	Thr	Thr	Leu		
	65				70					75					80		
Pro	His	Trp	Gly	Trp	Val	Thr	Gly	Thr	Tyr	Arg	Gly	Trp	Cys	Cys	Leu		
				85					90					95			
Ala	Ser	Pro	Ala	Cys	Gly	Gly	Ser	Trp	Val	Leu	Leu	Pro	Phe	Gly	Phe		
			100					105					110				
Val	Phe	Tyr	Leu	Ser	Gly	Trp	Ala	Ser	Phe								
	115						120										

<210> 1883  
 <211> 65  
 <212> PRT  
 <213> Homo sapiens

<400> 1883  
 Met Pro Arg Ser Ser Trp Arg Pro Ala Pro Ser Arg Pro Trp Met Pro  
   1                  5                  10                  15  
 Trp Ser Cys Ala Ser Ser Trp Ser Thr Ser Gly Leu Trp Thr Leu Leu  
           20                  25                  30  
 Cys Thr Arg Ala Ala Cys Thr Ser Ser Gln Arg Pro Thr Thr Thr Cys  
           35                  40                  45  
 Trp Asp Gln Pro Arg Arg Leu Thr Leu Leu Cys Ser Gly Ala Cys Ser  
   50                  55                  60  
 Arg  
 65

<210> 1884  
 <211> 66  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (14)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (28)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1884  
 Ser Gln Leu Leu Gly Arg Leu Arg Gln Glu Asn Arg Leu Xaa Pro Gly  
   1                  5                  10                  15

Gly Gly Gly Trp Ser Glu Arg Arg Ser Cys His Xaa Thr Pro Ala Trp  
20 25 30  
Val Thr Glu Arg Gln Thr Val Ser Lys Lys Lys Lys Lys Lys Lys Asn  
35 40 45  
Val Arg Lys Glu Val Glu Ser Tyr Phe His Leu Tyr Phe Ser His Cys  
50 55 60  
Leu Ala  
65

<210> 1885  
<211> 242  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (172)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (197)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (198)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (205)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (214)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (228)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (233)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (236)  
<223> Xaa equals any of the naturally occurring L-amino acids.



&lt;400&gt; 1885

```

Met His Arg Leu Ala Pro His Cys Ser Phe Ala Arg Trp Leu Leu Cys
 1              5              10              15

Asn Gly Ser Leu Phe Arg Tyr Lys His Pro Ser Glu Glu Glu Leu Arg
      20              25              30

Ala Leu Ala Gly Lys Pro Arg Pro Arg Gly Arg Lys Glu Arg Trp Ala
      35              40              45

Asn Gly Leu Ser Glu Glu Lys Pro Leu Ser Val Pro Arg Asp Ala Pro
      50              55              60

Phe Gln Leu Glu Thr Cys Pro Leu Thr Thr Val Asp Ala Leu Val Leu
      65              70              75              80

Arg Phe Phe Leu Glu Tyr Gln Trp Phe Val Asp Phe Ala Val Tyr Ser
      85              90              95

Gly Gly Val Tyr Leu Phe Thr Glu Ala Tyr Tyr Tyr Met Leu Gly Pro
      100              105              110

Ala Lys Glu Thr Asn Ile Ala Val Phe Trp Cys Leu Leu Thr Val Thr
      115              120              125

Phe Ser Ile Lys Met Phe Leu Thr Val Thr Arg Leu Tyr Phe Ser Ala
      130              135              140

Glu Glu Gly Gly Glu Arg Ser Val Cys Leu Thr Phe Ala Phe Leu Phe
      145              150              155              160

Leu Leu Leu Ala Met Leu Val Gln Val Val Arg Xaa Glu Thr Leu Glu
      165              170              175

Leu Gly Leu Asp Leu Ala Gly Ser Met Thr Gln Asn Leu Glu Pro Leu
      180              185              190

Leu Lys Lys Gln Xaa Xaa Asp Trp Ala Leu Pro Val Xaa Lys Leu Leu
      195              200              205

Ser Arg Asp Cys Met Xaa Leu Gly Trp Cys Phe Tyr Phe Ser Trp Val
      210              215              220

Ala Thr Arg Xaa Cys Ile Glu Lys Xaa Tyr Leu Xaa Lys Ser Val Cys
      225              230              235              240

Thr Gly

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&lt;210&gt; 1886

&lt;211&gt; 479

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1886

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Met Ala Val Leu Gly Val Gln Leu Val Val Thr Leu Leu Thr Ala Thr
 1              5              10              15

```

Leu Met His Arg Leu Ala Pro His Cys Ser Phe Ala Arg Trp Leu Leu  
                   20                                  25                                  30  
 Cys Asn Gly Ser Leu Phe Arg Tyr Lys His Pro Ser Glu Glu Glu Leu  
                   35                                  40                                  45  
 Arg Ala Leu Ala Gly Lys Pro Arg Pro Arg Gly Arg Lys Glu Arg Trp  
                   50                                  55                                  60  
 Ala Asn Gly Leu Ser Glu Glu Lys Pro Leu Ser Val Pro Arg Asp Ala  
                   65                                  70                                  75                                  80  
 Pro Phe Gln Leu Glu Thr Cys Pro Leu Thr Thr Val Asp Ala Leu Val  
                                   85                                  90                                  95  
 Leu Arg Phe Phe Leu Glu Tyr Gln Trp Phe Val Asp Phe Ala Val Tyr  
                                   100                                  105                                  110  
 Ser Gly Gly Val Tyr Leu Phe Thr Glu Ala Tyr Tyr Tyr Met Leu Gly  
                   115                                  120                                  125  
 Pro Ala Lys Glu Thr Asn Ile Ala Val Phe Trp Cys Leu Leu Thr Val  
                   130                                  135                                  140  
 Thr Phe Ser Ile Lys Met Phe Leu Thr Val Thr Arg Leu Tyr Phe Ser  
                   145                                  150                                  155                                  160  
 Ala Glu Glu Gly Gly Glu Arg Ser Val Cys Leu Thr Phe Ala Phe Leu  
                                   165                                  170                                  175  
 Phe Leu Leu Leu Ala Met Leu Val Gln Val Val Arg Glu Glu Thr Leu  
                                   180                                  185                                  190  
 Glu Leu Gly Leu Glu Pro Gly Leu Ala Ser Met Thr Gln Asn Leu Glu  
                   195                                  200                                  205  
 Pro Leu Leu Lys Lys Gln Gly Trp Asp Trp Ala Leu Pro Val Ala Lys  
                   210                                  215                                  220  
 Leu Ala Ile Arg Val Gly Leu Ala Val Val Gly Ser Val Leu Gly Ala  
                   225                                  230                                  235                                  240  
 Phe Leu Thr Phe Pro Gly Leu Arg Leu Ala Gln Thr His Arg Asp Ala  
                                   245                                  250                                  255  
 Leu Thr Met Ser Glu Asp Arg Pro Met Leu Gln Phe Leu Leu His Thr  
                                   260                                  265                                  270  
 Ser Phe Leu Ser Pro Leu Phe Ile Leu Trp Leu Trp Thr Lys Pro Ile  
                   275                                  280                                  285  
 Ala Arg Asp Phe Leu His Gln Pro Pro Phe Gly Glu Thr Arg Phe Ser  
                   290                                  295                                  300  
 Leu Leu Ser Asp Ser Ala Phe Asp Ser Gly Arg Leu Trp Leu Leu Val  
                   305                                  310                                  315                                  320  
 Val Leu Cys Leu Leu Arg Leu Ala Val Thr Arg Pro His Leu Gln Ala  
                                   325                                  330                                  335

Tyr Leu Cys Leu Ala Lys Ala Arg Val Glu Gln Leu Arg Arg Glu Ala  
 340 345 350  
 Gly Arg Ile Glu Ala Arg Glu Ile Gln Gln Arg Val Val Arg Val Tyr  
 355 360 365  
 Cys Tyr Val Thr Val Val Ser Leu Gln Tyr Leu Thr Pro Leu Ile Leu  
 370 375 380  
 Thr Leu Asn Cys Thr Leu Leu Leu Lys Thr Leu Gly Gly Tyr Ser Trp  
 385 390 395 400  
 Gly Leu Gly Pro Ala Pro Leu Leu Ser Pro Asp Pro Ser Ser Ala Ser  
 405 410 415  
 Ala Ala Pro Ile Gly Ser Gly Glu Asp Glu Val Gln Gln Thr Ala Ala  
 420 425 430  
 Arg Ile Ala Gly Ala Leu Gly Gly Leu Leu Thr Pro Leu Phe Leu Arg  
 435 440 445  
 Gly Val Leu Ala Tyr Leu Ile Trp Trp Thr Ala Ala Cys Gln Leu Leu  
 450 455 460  
 Ala Ser Leu Phe Gly Leu Tyr Phe His Gln His Leu Ala Gly Ser  
 465 470 475

&lt;210&gt; 1887

&lt;211&gt; 122

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1887

Met Arg His His Thr Trp Leu Ile Phe Leu Ile Leu Ile Phe Val Glu  
 1 5 10 15  
 Met Gly Gly Gln Val Ser Leu Cys Cys Pro Gly Cys Ser Arg Thr Pro  
 20 25 30  
 Gly His Lys Pro Ser Ser His Leu Ser Leu Pro Met Arg Arg Asn Tyr  
 35 40 45  
 Arg Trp Leu Arg Cys Glu Pro Pro Cys Leu Ala Phe Leu His Tyr Leu  
 50 55 60  
 Glu Ile Arg Trp Glu Glu Ala Phe Phe Trp Val Gly Leu Arg Arg His  
 65 70 75 80  
 Thr Glu Val Pro Gln Val Ile Gly Ala Gly Pro Leu Pro Phe Ser Pro  
 85 90 95  
 Pro Trp Val Val Val Asp Arg Ser Leu Gly Trp Asp Gly Glu Glu Arg  
 100 105 110  
 Ser Cys Cys Val Ser Cys Leu Leu Phe Lys  
 115 120

&lt;210&gt; 1888

&lt;211&gt; 122

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1888

Met Arg His His Thr Trp Leu Ile Phe Leu Ile Leu Ile Phe Val Glu  
 1 5 10 15

Met Gly Gly Gln Val Ser Leu Cys Cys Pro Gly Cys Ser Arg Thr Pro  
 20 25 30

Gly His Lys Pro Ser Ser His Leu Ser Leu Pro Met Arg Arg Asn Tyr  
 35 40 45

Arg Trp Leu Arg Cys Glu Pro Pro Cys Leu Ala Phe Leu His Tyr Leu  
 50 55 60

Glu Ile Arg Trp Glu Glu Ala Phe Phe Trp Val Gly Leu Arg Arg His  
 65 70 75 80

Thr Glu Val Pro Gln Val Ile Gly Ala Gly Pro Leu Pro Phe Ser Pro  
 85 90 95

Pro Trp Val Val Val Asp Arg Ser Leu Gly Trp Asp Gly Glu Glu Arg  
 100 105 110

Ser Cys Cys Val Ser Cys Leu Leu Phe Lys  
 115 120

&lt;210&gt; 1889

&lt;211&gt; 92

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1889

Met Glu Leu Val Phe Leu Ile Ile Ser Leu Val Cys Gln His Cys Ser  
 1 5 10 15

Pro Asp Ser Ala Gly Asp Leu Cys Val Gln Thr Pro Ser Val Trp Pro  
 20 25 30

Arg Thr Leu Met Glu Ile Met Leu Ser Ser Leu Gly Glu Phe Ala Leu  
 35 40 45

Ser Asn Asn Gln Arg Phe Val Cys Phe Asn Asn Ile His Ser Ser Trp  
 50 55 60

Ala Trp Trp Leu Thr Ser Val Ile Pro Ala Leu Trp Glu Ala Asp Thr  
 65 70 75 80

Gly Gly Leu Leu Glu Ala Arg Ser Leu Arg Pro Ala  
 85 90

&lt;210&gt; 1890

&lt;211&gt; 92

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1890

Met Glu Leu Val Phe Leu Ile Ile Ser Leu Val Cys Gln His Cys Ser  
 1 5 10 15

Pro Asp Ser Ala Gly Asp Leu Cys Val Gln Thr Pro Ser Val Trp Pro  
 20 25 30

Arg Thr Leu Met Glu Ile Met Leu Ser Ser Leu Gly Glu Phe Ala Leu  
 35 40 45

Ser Asn Asn Gln Arg Phe Val Cys Phe Asn Asn Ile His Ser Ser Trp  
 50 55 60

Ala Trp Trp Leu Thr Ser Val Ile Pro Ala Leu Trp Glu Ala Asp Thr  
 65 70 75 80

Gly Gly Leu Leu Glu Ala Arg Ser Leu Arg Pro Ala  
 85 90

&lt;210&gt; 1891

&lt;211&gt; 99

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (96)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1891

Met Phe Ala Phe Ser Pro Leu Ser Arg Leu Ala Met Leu Gly Val Cys  
 1 5 10 15

Cys Gly Cys Cys Leu Gly Leu Phe Leu Glu Ser Asp Thr Gly Ile Asn  
 20 25 30

Phe Leu Asn Phe Asn Tyr Leu Ala Ser Tyr Ser Trp Ser Ser Arg Ser  
 35 40 45

Ser Asn Phe Asn Asn Leu Gly Ile Phe Ser Phe Phe Phe Glu Thr  
 50 55 60

Glu Ser Arg Ser Val Ala Gln Ala Gly Val Gln Trp His Tyr Leu Ser  
 65 70 75 80

Ser Leu Gln Ala Leu Pro Pro Gly Phe Thr Pro Phe Ser Cys Leu Xaa  
 85 90 95

Pro Thr Glu

&lt;210&gt; 1892

&lt;211&gt; 100

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1892

Met Phe Ala Phe Ser Pro Leu Ser Arg Leu Ala Met Leu Gly Val Cys  
 1 5 10 15

Cys Gly Cys Cys Leu Gly Leu Phe Leu Glu Ser Asp Thr Gly Ile Asn  
 20 25 30

Phe Leu Asn Phe Asn Tyr Leu Ala Ser Tyr Ser Trp Ser Ser Arg Ser  
 35 40 45

Ser Asn Phe Asn Asn Leu Gly Ile Phe Ser Phe Phe Phe Phe Glu Thr  
 50 55 60

Glu Ser Arg Ser Val Ala Gln Ala Gly Val Gln Trp His Tyr Leu Ser  
 65 70 75 80

Ser Leu Gln Ala Leu Pro Pro Gly Phe Thr Pro Phe Ser Cys Leu Ser  
 85 90 95

Leu Pro Ser Ser  
 100

&lt;210&gt; 1893

&lt;211&gt; 167

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (140)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1893

Met Leu Gln Gly His Ser Ser Val Phe Gln Ala Leu Leu Gly Thr Phe  
 1 5 10 15

Phe Thr Trp Gly Met Thr Ala Ala Gly Ala Ala Leu Val Phe Val Phe  
 20 25 30

Ser Ser Gly Gln Arg Arg Ile Leu Asp Gly Ser Leu Gly Phe Ala Ala  
 35 40 45

Gly Val Met Leu Ala Ala Ser Tyr Trp Ser Leu Leu Ala Pro Ala Val  
 50 55 60

Glu Met Ala Thr Ser Ser Gly Gly Phe Gly Ala Phe Ala Phe Phe Pro  
 65 70 75 80

Val Ala Val Gly Phe Thr Leu Gly Ala Ala Phe Val Tyr Leu Ala Asp  
 85 90 95

Leu Leu Met Pro His Leu Gly Ala Ala Glu Asp Pro Gln Thr Ala Leu  
 100 105 110

Ala Leu Asn Phe Gly Ser Thr Leu Met Lys Lys Lys Ser Asp Pro Glu  
 115 120 125  
 Gly His Ala Leu Leu Phe Pro Glu Arg Ile His Xaa Ile Asp Lys Ser  
 130 135 140  
 Glu Asn Gly Glu Ala Tyr Gln Arg Lys Lys Ala Ala Ala Thr Gly Leu  
 145 150 155 160  
 Pro Glu Gly Pro Ala Val Pro  
 165

<210> 1894

<211> 167

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (140)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1894

Met Leu Gln Gly His Ser Ser Val Phe Gln Ala Leu Leu Gly Thr Phe  
 1 5 10 15  
 Phe Thr Trp Gly Met Thr Ala Ala Gly Ala Ala Leu Val Phe Val Phe  
 20 25 30  
 Ser Ser Gly Gln Arg Arg Ile Leu Asp Gly Ser Leu Gly Phe Ala Ala  
 35 40 45  
 Gly Val Met Leu Ala Ala Ser Tyr Trp Ser Leu Leu Ala Pro Ala Val  
 50 55 60  
 Glu Met Ala Thr Ser Ser Gly Gly Phe Gly Ala Phe Ala Phe Phe Pro  
 65 70 75 80  
 Val Ala Val Gly Phe Thr Leu Gly Ala Ala Phe Val Tyr Leu Ala Asp  
 85 90 95  
 Leu Leu Met Pro His Leu Gly Ala Ala Glu Asp Pro Gln Thr Ala Leu  
 100 105 110  
 Ala Leu Asn Phe Gly Ser Thr Leu Met Lys Lys Lys Ser Asp Pro Glu  
 115 120 125  
 Gly His Ala Leu Leu Phe Pro Glu Arg Ile His Xaa Ile Asp Lys Ser  
 130 135 140  
 Glu Asn Gly Glu Ala Tyr Gln Arg Lys Lys Ala Ala Ala Thr Gly Leu  
 145 150 155 160  
 Pro Glu Gly Pro Ala Val Pro  
 165

&lt;210&gt; 1895

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1895

Met Lys Glu Gln Ser Leu Pro Ser Phe Leu Trp Lys Met Leu Leu Trp  
 1 5 10 15

Tyr Cys Leu Val Cys Cys Asp Thr Leu Glu Ser Phe Val Ser Val Phe  
 20 25 30

Ser Leu Tyr Pro Gly Thr Ala Leu Gly Ile Trp Glu Ala Leu Thr Val  
 35 40 45

Tyr Gly Arg Cys Ala Gln Phe Phe Cys Phe Gln Gly Ala Lys Glu Val  
 50 55 60

Ala Val His Met Glu Thr Phe Leu Phe Leu Glu Cys Glu Gly Trp Gly  
 65 70 75 80

Pro Lys Gln Val Pro Asn Ala Ala Ala Phe Leu Leu Val  
 85 90

&lt;210&gt; 1896

&lt;211&gt; 41

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1896

Ala Arg Ala Leu Gly Leu Phe Val Ser Met Phe Ser Leu Thr Asn Pro  
 1 5 10 15

Ser Pro Val Leu Ser Ala Leu Leu Gly Tyr Thr Gln Leu Asn Asn Leu  
 20 25 30

Val His Phe Leu Val Trp Glu Pro Leu  
 35 40

&lt;210&gt; 1897

&lt;211&gt; 93

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1897

Met Lys Glu Gln Ser Leu Pro Ser Phe Leu Trp Lys Met Leu Leu Trp  
 1 5 10 15

Tyr Cys Leu Val Cys Cys Asp Thr Leu Glu Ser Phe Val Ser Val Phe  
 20 25 30

Ser Leu Tyr Pro Gly Thr Ala Leu Gly Ile Trp Glu Ala Leu Thr Val  
 35 40 45

Tyr Gly Arg Cys Ala Gln Phe Phe Cys Phe Gln Gly Ala Lys Glu Val  
 50 55 60



Ala Val His Met Glu Thr Phe Leu Phe Leu Glu Cys Glu Gly Trp Gly  
 65 70 75 80

Pro Lys Gln Val Pro Asn Ala Ala Ala Phe Leu Leu Val  
 85 90

<210> 1898

<211> 117

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (89)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (111)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (116)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1898

Met Thr Ser Ile Trp His Arg Pro Val Cys Pro Leu Ser Trp Leu Val  
 1 5 10 15

Pro Ser Ala Ala Phe Ser Asn Trp Gly Pro Gly Cys Arg Ala Val Cys  
 20 25 30

Ser Pro Arg Trp Ala Thr Pro Ala Lys Ile Pro Thr Pro Lys Cys Asp  
 35 40 45

Arg Val Ala His Glu Glu Gly Ser Ala Leu Arg Val Pro Ser Arg Val  
 50 55 60

His Ser Ser Ser Gln Leu Leu Arg Val Ala Pro Ala Ser Pro Thr Ser  
 65 70 75 80

Ser Leu Ser Pro Val Met Ser Arg Xaa Pro Pro Pro Ser Arg Val Ser  
 85 90 95

Val Trp Leu Phe Val Cys Leu Pro Thr Arg Leu Pro Val Pro Xaa Ala  
 100 105 110

Leu Pro Leu Xaa Pro  
 115

<210> 1899

<211> 38

<212> PRT

<213> Homo sapiens

&lt;400&gt; 1899

Ile Ser His Val Leu Ile Asp Ala Tyr Ile Ser Leu Lys Arg Ile Lys  
 1 5 10 15

Ser Ser Cys Asn Pro Thr Thr Leu Gly Met Cys Ser Glu Asp Leu Leu  
 20 25 30

Arg Leu Cys His Trp Ser  
 35

&lt;210&gt; 1900

&lt;211&gt; 88

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1900

Met Thr Ser Ile Trp His Arg Pro Val Cys Pro Leu Ser Trp Leu Val  
 1 5 10 15

Pro Ser Ala Ala Phe Ser Asn Trp Gly Pro Gly Cys Arg Ala Val Cys  
 20 25 30

Ser Pro Arg Trp Ala Thr Pro Ala Lys Ile Pro Thr Pro Lys Cys Asp  
 35 40 45

Arg Val Ala His Glu Glu Gly Ser Ala Leu Arg Val Pro Ser Arg Val  
 50 55 60

His Ser Ser Ser Gln Leu Leu Arg Val Ala Pro Ala Ser Pro Thr Ser  
 65 70 75 80

Ser Leu Ser Pro Val Met Ser Arg  
 85

&lt;210&gt; 1901

&lt;211&gt; 88

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1901

Met Thr Ser Ile Trp His Arg Pro Val Cys Pro Leu Ser Trp Leu Val  
 1 5 10 15

Pro Ser Ala Ala Phe Ser Asn Trp Gly Pro Gly Cys Arg Ala Val Cys  
 20 25 30

Ser Pro Arg Trp Ala Thr Pro Ala Lys Ile Pro Thr Pro Lys Cys Asp  
 35 40 45

Arg Val Ala His Glu Glu Gly Ser Ala Leu Arg Val Pro Ser Arg Val  
 50 55 60

His Ser Ser Ser Gln Leu Leu Arg Val Ala Pro Ala Ser Pro Thr Ser  
 65 70 75 80

Ser Leu Ser Pro Val Met Ser Arg  
85

<210> 1902

<211> 113

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (57)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (73)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1902

Met	Asn	Ser	Ala	Phe	Ser	Thr	Cys	Leu	Leu	Leu	Gln	Asp	Leu	Gly	
1				5				10					15		
Val	Pro	Leu	Thr	Leu	Thr	Gly	Leu	Pro	Pro	Ala	Leu	Gly	Leu	Ala	Pro
			20				25						30		
Pro	Val	Leu	Glu	Pro	Arg	Ala	Pro	Gly	Leu	Glu	Leu	Pro	Leu	Trp	Gly
		35					40					45			
Gly	Ser	Gln	Ala	Pro	Pro	Leu	Pro	Xaa	Leu	Ser	Ser	Val	Pro	Cys	Ser
	50					55					60				
Ala	Pro	Pro	Leu	Tyr	Leu	Ser	Val	Xaa	Arg	Pro	Leu	Thr	Glu	Arg	Arg
65					70				75						80
Cys	Arg	Val	Ser	Arg	Gly	Pro	Arg	Trp	Ser	Gln	Gly	Gln	Gly	Trp	Asp
				85					90					95	
Leu	Gln	Gly	Thr	Arg	Gly	Ala	His	Gly	Leu	Arg	His	Leu	Cys	Pro	Gly
		100						105					110		
Ser															

<210> 1903

<211> 117

<212> PRT

<213> Homo sapiens

<400> 1903

Met	Trp	Arg	Val	Ser	Ile	Ser	Val	Pro	Trp	Leu	Trp	Ser	Ala	Trp	Pro
1				5					10					15	
Ile	Ser	Ser	Val	Gly	Phe	Leu	Cys	Leu	Pro	Ala	Ser	Pro	His	Pro	Ser
			20					25					30		
Leu	Pro	Pro	Ser	Ser	Thr	Leu	His	Asp	Leu	Ala	Val	Thr	Ser	Gly	Pro

35                      40                      45  
 Glu Arg Trp Arg Gln Leu Thr Ala Ala Ala Arg Thr Val Ser Arg Val  
     50                      55                      60  
 Arg Ser Ala Ala Gly Trp Gly Ser Trp Pro Cys Pro Ala Ser Met Asn  
     65                      70                      75                      80  
 Ser Cys Pro Arg Thr Val Cys Leu Trp Asn Leu Arg Ser Ile Tyr Cys  
                     85                      90                      95  
 Val Cys Ser Ser Arg Leu Ser Thr Ser Cys Arg Lys Ser Pro Arg Ile  
                     100                      105                      110  
 Thr Met Pro Thr Gln  
                     115

<210> 1904  
 <211> 117  
 <212> PRT  
 <213> Homo sapiens

<400> 1904  
 Met Trp Arg Val Ser Ile Ser Val Pro Trp Leu Trp Ser Ala Trp Pro  
     1                      5                      10                      15  
 Ile Ser Ser Val Gly Phe Leu Cys Leu Pro Ala Ser Pro His Pro Ser  
                     20                      25                      30  
 Leu Pro Pro Ser Ser Thr Leu His Asp Leu Ala Val Thr Ser Gly Pro  
                     35                      40                      45  
 Glu Arg Trp Arg Gln Leu Thr Ala Ala Ala Arg Thr Val Ser Arg Val  
     50                      55                      60  
 Arg Ser Ala Ala Gly Trp Gly Ser Trp Pro Cys Pro Ala Ser Met Asn  
     65                      70                      75                      80  
 Ser Cys Pro Arg Thr Val Cys Leu Trp Asn Leu Arg Ser Ile Tyr Cys  
                     85                      90                      95  
 Val Cys Ser Ser Arg Leu Ser Thr Ser Cys Arg Lys Ser Pro Arg Ile  
                     100                      105                      110  
 Thr Met Pro Thr Gln  
                     115

<210> 1905  
 <211> 124  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (118)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1905

Met Ile Lys Ser Ala Pro Val Gly Pro Val Ala Gly Gly Ile Met Gly  
 1 5 10 15  
 Cys Ile Met Val Leu Val Leu Ala Val Tyr Ala Tyr Arg His Gln Ile  
 20 25 30  
 His Arg Arg Ser His Gln His Met Ser Pro Leu Ala Ala Gln Glu Met  
 35 40 45  
 Ser Val Arg Met Ser Asn Leu Glu Asn Asp Arg Asp Glu Arg Asp Asp  
 50 55 60  
 Asp Ser His Glu Asp Arg Gly Ile Ile Ser Asn Thr Arg Phe Ile Ala  
 65 70 75 80  
 Ala Val Ile Glu Arg His Ala His Ser Pro Glu Arg Arg Arg Arg Tyr  
 85 90 95  
 Trp Gly Arg Ser Gly Thr Glu Ser Asp His Gly Tyr Ser Thr Met Ser  
 100 105 110  
 Pro Gln Glu Asp Ser Xaa Lys Ser Ser Met Gln Gln  
 115 120

&lt;210&gt; 1906

&lt;211&gt; 165

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (145)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (147)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (148)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (152)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1906

Met Ala Val Tyr Leu Leu Trp Gln Glu Leu Gly Pro Ala Val Leu Ala  
 1 5 10 15  
 Gly Val Ala Val Leu Val Phe Val Ile Pro Ile Asn Ala Leu Ala Ala  
 20 25 30

[illegible]

```
<210> 1907
<211> 50
<212> PRT
<213> Homo sapiens
```

```

<400> 1907
Cys Tyr Arg Cys Ile Phe Ser Ile Val Ser Asn Arg Phe Ile Phe Ser
 1           5           10           15
Asn Pro Trp Ile Ser Ser Cys Ile Phe Thr Ile Ser Lys Gln Ser Asp
 20           25           30
Ser Ile Ala Lys Arg Gln Lys Cys Glu Phe Phe Phe Lys Leu Val Asn
 35           40           45
Thr Cys
 50

```

```
<210> 1908
<211> 84
<212> PRT
<213> Homo sapiens
```

<400> 1908  
Met Ile Met Ser Ser Val Thr Leu Leu Trp Ser Ile Leu His Gln Ala  
1 5 10 15  
Asp Ser Ser Glu Lys Met Thr Ile Ala Ala Ser Ala Ser Leu Thr Thr  
20 25 30

Ile Asn Leu Gly Ala Thr Lys Asn Leu Arg Gln Gln Ile Leu Glu Leu  
                   35                  40                  45

Leu Gly Pro Ile Ser Met Asn His Gly Val His Phe Met Ala Ala Ile  
           50                  55                  60

Ala Phe Val Trp Asn Glu Arg Arg Gln Asn Lys Thr Thr Thr Arg Thr  
       65                  70                  75                  80

Lys Val Cys Ile

<210> 1909  
 <211> 84  
 <212> PRT  
 <213> Homo sapiens

<400> 1909  
 Met Ile Met Ser Ser Val Thr Leu Leu Trp Ser Ile Leu His Gln Ala  
       1                  5                  10                  15

Asp Ser Ser Glu Lys Met Thr Ile Ala Ala Ser Ala Ser Leu Thr Thr  
           20                  25                  30

Ile Asn Leu Gly Ala Thr Lys Asn Leu Arg Gln Gln Ile Leu Glu Leu  
           35                  40                  45

Leu Gly Pro Ile Ser Met Asn His Gly Val His Phe Met Ala Ala Ile  
       50                  55                  60

Ala Phe Val Trp Asn Glu Arg Arg Gln Asn Lys Thr Thr Thr Arg Thr  
       65                  70                  75                  80

Lys Val Cys Ile

<210> 1910  
 <211> 275  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (71)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (153)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1910  
 Met Trp Ser Tyr His Leu Ile Gly Leu Ile Trp Thr Ser Glu Phe Ile  
       1                  5                  10                  15

Leu Ala Cys Gln Gln Met Thr Ile Ala Gly Ala Val Val Thr Cys Tyr  
                   20                  25                  30  
 Phe Asn Arg Ser Lys Asn Asp Pro Pro Asp His Pro Ile Leu Ser Ser  
                   35                  40                  45  
 Leu Ser Ile Leu Phe Phe Tyr His Gln Gly Thr Ile Val Lys Gly Ser  
           50                  55                  60  
 Phe Leu Ile Ser Val Val Xaa Ile Pro Arg Ile Ile Val Met Tyr Met  
   65                  70                  75                  80  
 Gln Asn Ala Leu Lys Glu Gln Gln His Gly Ala Leu Ser Arg Tyr Leu  
                   85                  90                  95  
 Phe Arg Cys Cys Tyr Cys Cys Phe Trp Cys Leu Asp Lys Tyr Leu Leu  
                   100                  105                  110  
 His Leu Asn Gln Asn Ala Tyr Thr Thr Thr Ala Ile Asn Gly Thr Asp  
           115                  120                  125  
 Phe Cys Thr Ser Ala Lys Asp Ala Phe Lys Ile Leu Ser Lys Asn Ser  
   130                  135                  140  
 Ser His Phe Thr Ser Ile Asn Cys Xaa Gly Asp Phe Ile Ile Phe Leu  
  145                  150                  155                  160  
 Gly Lys Val Leu Val Val Cys Phe Thr Val Phe Gly Gly Leu Met Ala  
                   165                  170                  175  
 Phe Asn Tyr Asn Arg Ala Phe Gln Val Trp Ala Val Pro Leu Leu Leu  
                   180                  185                  190  
 Val Ala Phe Phe Ala Tyr Leu Val Ala His Ser Phe Leu Ser Val Phe  
           195                  200                  205  
 Glu Thr Val Leu Asp Ala Leu Phe Leu Cys Phe Ala Val Asp Leu Glu  
   210                  215                  220  
 Thr Asn Asp Gly Ser Ser Glu Lys Pro Tyr Phe Met Asp Gln Glu Phe  
  225                  230                  235                  240  
 Leu Ser Phe Val Lys Arg Ser Asn Lys Leu Asn Asn Ala Arg Ala Gln  
                   245                  250                  255  
 Gln Asp Lys His Ser Leu Arg Asn Glu Glu Gly Thr Glu Leu Gln Ala  
           260                  265                  270  
 Ile Val Arg  
       275

&lt;210&gt; 1911

&lt;211&gt; 275

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1911

Met Trp Ser Tyr His Leu Ile Gly Leu Ile Trp Thr Ser Glu Phe Ile



1	5	10	15
Leu Ala Cys Gln Gln Met Thr Ile Ala Gly Ala Val Val Thr Cys Tyr	20	25	30
Phe Asn Arg Ser Lys Asn Asp Pro Pro Asp His Pro Ile Leu Ser Ser	35	40	45
Leu Ser Ile Leu Phe Phe Tyr His Gln Gly Thr Ile Val Lys Gly Ser	50	55	60
Phe Leu Ile Ser Val Val Arg Ile Pro Arg Ile Ile Val Met Tyr Met	65	70	75
Gln Asn Ala Leu Lys Glu Gln Gln His Gly Ala Leu Ser Arg Tyr Leu	85	90	95
Phe Arg Cys Cys Tyr Cys Cys Phe Trp Cys Leu Asp Lys Tyr Leu Leu	100	105	110
His Leu Asn Gln Asn Ala Tyr Thr Thr Thr Ala Ile Asn Gly Thr Asp	115	120	125
Phe Cys Thr Ser Ala Lys Asp Ala Phe Lys Ile Leu Ser Lys Asn Ser	130	135	140
Ser His Phe Thr Ser Ile Asn Cys Phe Gly Asp Phe Ile Ile Phe Leu	145	150	155
Gly Lys Val Leu Val Val Cys Phe Thr Val Phe Gly Gly Leu Met Ala	165	170	175
Phe Asn Tyr Asn Arg Ala Phe Gln Val Trp Ala Val Pro Leu Leu Leu	180	185	190
Val Ala Phe Phe Ala Tyr Leu Val Ala His Ser Phe Leu Ser Val Phe	195	200	205
Glu Thr Val Leu Asp Ala Leu Phe Leu Cys Phe Ala Val Asp Leu Glu	210	215	220
Thr Asn Asp Gly Ser Ser Glu Lys Pro Tyr Phe Met Asp Gln Glu Phe	225	230	235
Leu Ser Phe Val Lys Arg Ser Asn Lys Leu Asn Asn Ala Arg Ala Gln	245	250	255
Gln Asp Lys His Ser Leu Arg Asn Glu Glu Gly Thr Glu Leu Gln Ala	260	265	270
Ile Val Arg	275		

&lt;210&gt; 1912

&lt;211&gt; 136

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (133)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1912

Met	Ala	Cys	Ile	Leu	Lys	Arg	Lys	Ser	Val	Ile	Ala	Val	Ser	Phe	Ile
1				5					10					15	

Ala	Ala	Phe	Leu	Phe	Leu	Leu	Val	Val	Arg	Leu	Val	Asn	Glu	Val	Asn
			20						25				30		

Phe	Pro	Leu	Leu	Leu	Asn	Cys	Phe	Gly	Gln	Pro	Gly	Thr	Lys	Trp	Ile
		35					40					45			

Pro	Phe	Ser	Tyr	Thr	Tyr	Arg	Arg	Pro	Leu	Arg	Thr	His	Tyr	Gly	Tyr
	50					55					60				

Ile	Asn	Val	Lys	Thr	Gln	Glu	Pro	Leu	Gln	Leu	Asp	Cys	Asp	Leu	Cys
65					70					75					80

Ala	Ile	Val	Ser	Asn	Ser	Gly	Gln	Met	Val	Gly	Gln	Lys	Val	Gly	Asn
				85					90					95	

Glu	Ile	Asp	Arg	Ser	Ser	Cys	Ile	Trp	Arg	Met	Asn	Asn	Ala	Pro	Thr
			100					105					110		

Lys	Gly	Tyr	Glu	Glu	Asp	Val	Gly	Arg	Met	Thr	Met	Ile	Arg	Val	Val
		115					120					125			

Pro	Ile	Pro	Ala	Xaa	Leu	Phe	Cys
	130					135	

&lt;210&gt; 1913

&lt;211&gt; 64

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1913

Val	Phe	Thr	Ser	Ala	Lys	Tyr	Tyr	Gly	Glu	Leu	Ser	Leu	Lys	Cys	Ala
1				5					10					15	

Ile	Leu	Asp	Lys	Gly	Leu	Leu	Pro	Thr	Leu	Phe	Cys	Asn	Phe	Asp	Thr
			20					25					30		

Ser	Ile	Phe	Thr	Pro	Ile	Asn	Ile	Thr	Lys	Pro	Gln	Phe	Tyr	Arg	Trp
		35					40					45			

Lys	Glu	Leu	Leu	Phe	Phe	Cys	Cys	Ser	Leu	Met	Gln	Phe	Leu	Ile	Leu
	50					55					60				

&lt;210&gt; 1914

&lt;211&gt; 305

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1914

```

Met Ala Cys Ile Leu Lys Arg Lys Ser Val Ile Ala Val Ser Phe Ile
  1           5           10           15

Ala Ala Phe Leu Phe Leu Leu Val Val Arg Leu Val Asn Glu Val Asn
      20           25           30

Phe Pro Leu Leu Leu Asn Cys Phe Gly Gln Pro Gly Thr Lys Trp Ile
      35           40           45

Pro Phe Ser Tyr Thr Tyr Arg Arg Pro Leu Arg Thr His Tyr Gly Tyr
      50           55           60

Ile Asn Val Lys Thr Gln Glu Pro Leu Gln Leu Asp Cys Asp Leu Cys
      65           70           75           80

Ala Ile Val Ser Asn Ser Gly Gln Met Val Gly Gln Lys Val Gly Asn
      85           90           95

Glu Ile Asp Arg Ser Ser Cys Ile Trp Arg Met Asn Asn Ala Pro Thr
      100          105          110

Lys Gly Tyr Glu Glu Asp Val Gly Arg Met Thr Met Ile Arg Val Val
      115          120          125

Ser His Thr Ser Val Pro Leu Leu Leu Lys Asn Pro Asp Tyr Phe Phe
      130          135          140

Lys Glu Ala Asn Thr Thr Ile Tyr Val Ile Trp Gly Pro Phe Arg Asn
      145          150          155          160

Met Arg Lys Asp Gly Asn Gly Ile Val Tyr Asn Met Leu Lys Lys Thr
      165          170          175

Val Gly Ile Tyr Pro Asn Ala Gln Ile Tyr Val Thr Thr Glu Lys Arg
      180          185          190

Met Ser Tyr Cys Asp Gly Val Phe Lys Lys Glu Thr Gly Lys Asp Arg
      195          200          205

Val Gln Ser Gly Ser Tyr Leu Ser Thr Gly Trp Phe Thr Phe Ile Leu
      210          215          220

Ala Met Asp Ala Cys Tyr Gly Ile His Val Tyr Gly Met Ile Asn Asp
      225          230          235          240

Thr Tyr Cys Lys Thr Glu Gly Tyr Arg Lys Val Pro Tyr His Tyr Tyr
      245          250          255

Glu Gln Gly Arg Asp Glu Cys Asp Glu Tyr Phe Leu His Glu His Ala
      260          265          270

Pro Tyr Gly Gly His Arg Phe Ile Thr Glu Lys Lys Val Phe Ala Lys
      275          280          285

Trp Ala Lys Lys His Arg Ile Ile Phe Thr His Pro Asn Trp Thr Leu
      290          295          300

```

Ser  
305

<210> 1915  
<211> 305  
<212> PRT  
<213> Homo sapiens

<400> 1915

```

Met Ala Cys Ile Leu Lys Arg Lys Ser Val Ile Ala Val Ser Phe Ile
  1           5           10           15

Ala Ala Phe Leu Phe Leu Leu Val Val Arg Leu Val Asn Glu Val Asn
      20           25           30

Phe Pro Leu Leu Leu Asn Cys Phe Gly Gln Pro Gly Thr Lys Trp Ile
      35           40           45

Pro Phe Ser Tyr Thr Tyr Arg Arg Pro Leu Arg Thr His Tyr Gly Tyr
      50           55           60

Ile Asn Val Lys Thr Gln Glu Pro Leu Gln Leu Asp Cys Asp Leu Cys
      65           70           75           80

Ala Ile Val Ser Asn Ser Gly Gln Met Val Gly Gln Lys Val Gly Asn
      85           90           95

Glu Ile Asp Arg Ser Ser Cys Ile Trp Arg Met Asn Asn Ala Pro Thr
      100          105          110

Lys Gly Tyr Glu Glu Asp Val Gly Arg Met Thr Met Ile Arg Val Val
      115          120          125

Ser His Thr Ser Val Pro Leu Leu Leu Lys Asn Pro Asp Tyr Phe Phe
      130          135          140

Lys Glu Ala Asn Thr Thr Ile Tyr Val Ile Trp Gly Pro Phe Arg Asn
      145          150          155          160

Met Arg Lys Asp Gly Asn Gly Ile Val Tyr Asn Met Leu Lys Lys Thr
      165          170          175

Val Gly Ile Tyr Pro Asn Ala Gln Ile Tyr Val Thr Thr Glu Lys Arg
      180          185          190

Met Ser Tyr Cys Asp Gly Val Phe Lys Lys Glu Thr Gly Lys Asp Arg
      195          200          205

Val Gln Ser Gly Ser Tyr Leu Ser Thr Gly Trp Phe Thr Phe Ile Leu
      210          215          220

Ala Met Asp Ala Cys Tyr Gly Ile His Val Tyr Gly Met Ile Asn Asp
      225          230          235          240

Thr Tyr Cys Lys Thr Glu Gly Tyr Arg Lys Val Pro Tyr His Tyr Tyr
      245          250          255

```

Glu Gln Gly Arg Asp Glu Cys Asp Glu Tyr Phe Leu His Glu His Ala  
 260. 265 270

Pro Tyr Gly Gly His Arg Phe Ile Thr Glu Lys Lys Val Phe Ala Lys  
 275 280 285

Trp Ala Lys Lys His Arg Ile Ile Phe Thr His Pro Asn Trp Thr Leu  
 290 295 300

Ser  
 305

<210> 1916

<211> 80

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (65)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1916

Met Asp Ser Gly Gly Trp Met Asp Gly Asp Thr Arg Gln Ala Phe Pro  
 1 5 10 15

Cys Pro Trp Gly Leu Val Ser Leu Pro Leu Ala Gly Val Thr Leu Ala  
 20 25 30

Leu His Val Phe Thr Ala Ser Ala Leu Pro Arg Glu Leu Arg Ser Glu  
 35 40 45

Lys Asp Trp Pro Gly Gln Ser Pro Gly Pro Ile Val Ser Val Pro Gly  
 50 55 60

Xaa Gln Glu Gly Ile Leu Glu Gly Gly Pro Gly Thr Gln Phe Ala Leu  
 65 70 75 80

<210> 1917

<211> 331

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (249)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (257)

<223> Xaa equals any of the naturally occurring L-amino acids.

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (298)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (300)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (301)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1917

Met	Asp	Arg	Leu	Lys	Ser	His	Leu	Thr	Val	Cys	Phe	Leu	Pro	Ser	Val
1				5					10					15	

Pro	Phe	Leu	Ile	Leu	Val	Ser	Thr	Leu	Ala	Thr	Ala	Lys	Ser	Val	Thr
		20						25					30		

Asn	Ser	Thr	Leu	Asn	Gly	Thr	Asn	Val	Val	Leu	Gly	Ser	Val	Pro	Val
		35					40					45			

Ile	Ile	Ala	Arg	Thr	Asp	His	Ile	Ile	Val	Lys	Glu	Gly	Asn	Ser	Ala
		50				55					60				

Leu	Ile	Asn	Cys	Ser	Val	Tyr	Gly	Ile	Pro	Asp	Pro	Gln	Phe	Lys	Trp
65					70					75					80

Tyr	Asn	Ser	Ile	Gly	Lys	Leu	Leu	Lys	Glu	Glu	Glu	Asp	Glu	Lys	Glu
				85					90					95	

Arg	Gly	Gly	Gly	Lys	Trp	Gln	Met	His	Asp	Ser	Gly	Leu	Leu	Asn	Ile
			100					105						110	

Thr	Lys	Val	Ser	Phe	Ser	Asp	Arg	Gly	Lys	Tyr	Thr	Cys	Val	Ala	Ser
		115					120					125			

Asn	Ile	Tyr	Gly	Thr	Val	Asn	Asn	Thr	Val	Thr	Leu	Arg	Val	Ile	Phe
		130					135				140				

Thr	Ser	Gly	Asp	Met	Gly	Val	Tyr	Tyr	Met	Val	Val	Cys	Leu	Val	Ala
145					150					155					160

Phe	Thr	Ile	Val	Met	Val	Leu	Asn	Ile	Thr	Arg	Leu	Cys	Met	Met	Ser
				165					170					175	

Ser	His	Leu	Lys	Lys	Thr	Glu	Lys	Ala	Ile	Asn	Glu	Phe	Phe	Arg	Thr
		180						185						190	

Glu	Gly	Ala	Glu	Lys	Leu	Gln	Lys	Ala	Phe	Glu	Ile	Ala	Lys	Arg	Ile
		195					200					205			

Pro	Ile	Ile	Thr	Ser	Ala	Lys	Thr	Leu	Glu	Leu	Ala	Lys	Val	Thr	Gln
		210				215					220				

Phe	Lys	Thr	Met	Glu	Phe	Ala	Arg	Tyr	Ile	Glu	Glu	Leu	Ala	Arg	Ser
225					230					235					240

Val	Pro	Leu	Pro	Pro	Leu	Ile	Met	Xaa	Cys	Arg	Thr	Ile	Met	Glu	Glu
				245					250					255	
Xaa	Met	Glu	Val	Val	Gly	Leu	Glu	Glu	Gln	Gly	Gln	Asn	Phe	Val	Arg
			260					265					270		
His	Thr	Pro	Glu	Gly	Gln	Glu	Ala	Ala	Asp	Arg	Asp	Glu	Val	Tyr	Thr
		275					280					285			
Ile	Pro	Asn	Ser	Leu	Lys	Arg	Ser	Asp	Xaa	Pro	Xaa	Xaa	Val	Leu	Gly
	290					295					300				
Arg	Leu	Ile	Ala	Ala	Arg	Ala	Thr	Ser	Ala	Asn	Cys	His	Gln	Gly	Val
305					310					315					320
Ser	Ser	Pro	Ala	Val	Gln	Lys	Arg	Ala	Cys	Arg					
				325					330						

```
<210> 1918
<211> 77
<212> PRT
<213> Homo sapiens
```

```

<400> 1918
Val Gly Ser Leu Leu Gly Ser Ser Leu Val Ala Leu Leu Ser Leu Pro
  1              5              10              15
Gly Gly Trp Leu His Cys Pro Lys Asp Phe Gly Asn Ile Asn Asn Cys
      20              25              30
Arg Met Asp Leu Tyr Phe Phe Leu Leu Ala Gly Ile Gln Ala Val Thr
      35              40              45
Ala Leu Leu Phe Val Trp Ile Ala Gly Arg Tyr Glu Arg Ala Ser Gln
      50              55              60
Gly Pro Ala Ser His Ser Arg Phe Ser Arg Asp Arg Gly
  65              70              75

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```
<210> 1919
<211> 91
<212> PRT
<213> Homo sapiens
```

```

<400> 1919
Met Gln Gly Ala Ile Met Gly Ile Phe Phe Cys Leu Ser Gly Val Gly
  1             5             10             15
Ser Leu Leu Gly Ser Ser Leu Val Ala Leu Leu Ser Leu Pro Gly Gly
          20             25             30
Trp Leu His Cys Pro Lys Asp Phe Gly Asn Ile Asn Asn Cys Arg Met
      35             40             45
Asp Leu Tyr Phe Phe Leu Leu Ala Gly Ile Gln Ala Val Thr Ala Leu

```

50                      55                      60

Leu Phe Val Trp Ile Ala Gly Arg Tyr Glu Arg Ala Ser Gln Gly Pro  
65                      70                      75                      80

Ala Ser His Ser Arg Phe Ser Arg Asp Arg Gly  
85 90

```
<210> 1920
<211> 91
<212> PRT
<213> Homo sapiens
```

```
<400> 1920
Met Gln Gly Ala Ile Met Gly Ile Phe Phe Cys Leu Ser Gly Val Gly
  1             5             10             15
```

Ser Leu Leu Gly Ser Ser Leu Val Ala Leu Leu Ser Leu Pro Gly Gly  
20 25 30

Trp Leu His Cys Pro Lys Asp Phe Gly Asn Ile Asn Asn Cys Arg Met  
35 40 45

Asp Leu Tyr Phe Phe Leu Leu Ala Gly Ile Gln Ala Val Thr Ala Leu  
50 55 60

Leu Phe Val Trp Ile Ala Gly Arg Tyr Glu Arg Ala Ser Gln Gly Pro  
65 70 75 80

Ala Ser His Ser Arg Phe Ser Arg Asp Arg Gly  
85 90

```
<210> 1921
<211> 108
<212> PRT
<213> Homo sapiens
```

```
<400> 1921
Met Ser Leu Thr Pro Pro Thr Pro Val Leu Phe Leu Phe Leu Ser Leu
  1             5             10             15
```

Leu Trp Ala Arg Phe Phe Leu Ser Arg Leu Lys Cys Pro Gly Gly Cys  
20 25 30

Leu Cys Trp Pro Leu Leu Leu Ser Arg Gly Ser Ser Ala Ala Pro Trp  
35 40 45

Ala Ser Val Pro Met Asp Gly Ala Ala His Ala Ala Ile Ser Ala Pro  
50 55 60

Gly Leu Ser Val Gln Leu Leu Pro Arg Gln Leu Ala Ser Pro Ser Ala  
65 70 75 80

Asn Thr Glu Leu Arg Val Leu Leu Leu Pro Ala Arg Val Arg His Tyr  
85 90 95



Leu Pro Ser Ser Phe His Gln Val Leu Gly Ser Ser  
 100 105

<210> 1922

<211> 108

<212> PRT

<213> Homo sapiens

<400> 1922

Met Ser Leu Thr Pro Pro Thr Pro Val Leu Phe Leu Phe Leu Ser Leu  
 1 5 10 15

Leu Trp Ala Arg Phe Phe Leu Ser Arg Leu Lys Cys Pro Gly Gly Cys  
 20 25 30

Leu Cys Trp Pro Leu Leu Leu Ser Arg Gly Ser Ser Ala Ala Pro Trp  
 35 40 45

Ala Ser Val Pro Met Asp Gly Ala Ala His Ala Ala Ile Ser Ala Pro  
 50 55 60

Gly Leu Ser Val Gln Leu Leu Pro Arg Gln Leu Ala Ser Pro Ser Ala  
 65 70 75 80

Asn Thr Glu Leu Arg Val Leu Leu Leu Pro Ala Arg Val Arg His Tyr  
 85 90 95

Leu Pro Ser Ser Phe His Gln Val Leu Gly Ser Ser  
 100 105

<210> 1923

<211> 81

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (29)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1923

Ser Phe Leu Phe Phe Phe Phe Phe Phe Glu Thr Gly Phe Arg Ser  
 1 5 10 15

Val Phe Gln Ala Gly Val Gln Trp Cys Asp Leu Gly Xaa Leu Pro Pro  
 20 25 30

Arg Phe Lys Lys Phe Ser Cys Leu Ser Leu Pro Ser Ser Trp Asp Tyr  
 35 40 45

Arg His Ala Leu Pro His Pro Val Thr Phe Phe Cys Val Phe Leu Val  
 50 55 60

Glu Met Ala Phe Ala Met Leu Ala Met Ala Gly Leu Lys Leu Leu Ala  
 65 70 75 80

Ser

&lt;210&gt; 1924

&lt;211&gt; 108

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1924

Met Ser Leu Thr Pro Pro Thr Pro Val Leu Phe Leu Phe Leu Ser Leu  
 1 5 10 15

Leu Trp Ala Arg Phe Phe Leu Ser Arg Leu Lys Cys Pro Gly Gly Cys  
 20 25 30

Leu Cys Trp Pro Leu Leu Leu Ser Arg Gly Ser Ser Ala Ala Pro Trp  
 35 40 45

Ala Ser Val Pro Met Asp Gly Ala Ala His Ala Ala Ile Ser Ala Pro  
 50 55 60

Gly Leu Ser Val Gln Leu Leu Pro Arg Gln Leu Ala Ser Pro Ser Ala  
 65 70 75 80

Asn Thr Glu Leu Arg Val Leu Leu Leu Pro Ala Arg Val Arg His Tyr  
 85 90 95

Leu Pro Ser Ser Phe His Gln Val Leu Gly Ser Ser  
 100 105

&lt;210&gt; 1925

&lt;211&gt; 136

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (59)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (111)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1925

Met Tyr Gln Pro His Thr Gln Ser Trp Phe Pro Trp Cys Leu Ile Leu  
 1 5 10 15

Ser Ser Ser Gln Ala Gly Thr Arg Gly Leu Ser Trp His Leu Ala Asn  
 20 25 30

Ala Pro Val Lys Pro Gly Met Gly Leu Ala Phe Ala Leu Ile Arg Leu  
 35 40 45

Asp Ser Leu Leu Thr Cys Tyr Leu Pro Cys Xaa His Val Arg Leu Val

50                                      55                                      60  
 Arg Ala His Thr Cys Thr Ser Pro Thr Arg Pro Leu Leu Ser Tyr Gln  
 65                                      70                                      75                                      80  
 Ser Val Pro Ala Ala Ser Met Ile Cys Pro Pro Cys Glu Ile Pro His  
                                     85                                      90                                      95  
 Gly Glu Gly Ser Phe Glu Val Ala Gly Arg Ser Thr Glu Met Xaa His  
                                     100                                      105                                      110  
 Leu Pro Val Glu Ile Pro Arg Leu Pro Gly Gln Cys Gln Gln Ser Gln  
                                     115                                      120                                      125  
 Lys Thr His Pro Leu Ala Trp Ser  
                                     130                                      135

&lt;210&gt; 1926

&lt;211&gt; 136

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1926

Met Tyr Gln Pro His Thr Gln Ser Trp Phe Pro Trp Cys Leu Ile Leu  
 1                                      5                                      10                                      15  
 Ser Ser Ser Gln Ala Gly Thr Arg Gly Leu Ser Trp His Leu Ala Asn  
                                     20                                      25                                      30  
 Ala Pro Val Lys Pro Gly Met Gly Leu Ala Phe Ala Leu Ile Arg Leu  
                                     35                                      40                                      45  
 Asp Ser Leu Leu Thr Cys Tyr Leu Pro Cys Leu His Val Arg Leu Val  
                                     50                                      55                                      60  
 Arg Ala His Thr Cys Thr Ser Pro Thr Arg Pro Leu Leu Ser Tyr Gln  
 65                                      70                                      75                                      80  
 Ser Val Pro Ala Ala Ser Met Ile Cys Pro Pro Cys Glu Ile Pro His  
                                     85                                      90                                      95  
 Gly Glu Gly Ser Phe Glu Val Ala Gly Arg Ser Thr Glu Met Ser His  
                                     100                                      105                                      110  
 Leu Pro Val Glu Ile Pro Arg Leu Pro Gly Gln Cys Gln Gln Ser Gln  
                                     115                                      120                                      125  
 Lys Thr His Pro Leu Ala Trp Ser  
                                     130                                      135

&lt;210&gt; 1927

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1927

Met Leu Leu Gly Gly Arg Leu Leu Thr Gly Leu Ala Cys Gly Val Ala  
 1 5 10 15  
 Ser Leu Val Ala Pro Val Ser Val Pro Ser Leu Glu Cys Pro Val Ser  
 20 25 30  
 Arg Pro Glu Thr Glu Gly Glu Trp Asp Lys Pro Leu Pro Arg Pro Gly  
 35 40 45  
 Gly Ala Ala Pro Pro Gly Gly Thr Phe Trp Val Pro Gly Leu Lys Ser  
 50 55 60  
 Leu Arg Tyr Leu Ala Val Pro Pro Val Asp Pro Gly Lys Asp Pro Thr  
 65 70 75 80  
 Val Leu Ser Ile Leu His  
 85

<210> 1928  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<400> 1928  
 Met Leu Leu Leu Leu His Ile His Val Phe Gly His Ser Val Pro Ala  
 1 5 10 15  
 Ala Trp Ser Ala Ser Cys Val Gln Ile Leu Pro Val Leu Leu Arg Ile  
 20 25 30  
 Arg Ser Gln Ile Leu Ile His Thr Ile Leu Phe Ala Ala Tyr Thr Leu  
 35 40 45  
 Ala Phe Leu Asn Phe Phe Leu Ser Pro Asn Tyr Ala Val Phe Cys Leu  
 50 55 60  
 Ala Ile Val Leu Leu His Thr Ser Ser Phe Gly Leu Glu Tyr Pro Ser  
 65 70 75 80  
 Leu Cys Leu Phe Phe Leu Lys Glu Thr Gly Ser Gln Cys Gly Leu Val  
 85 90 95  
 Ser Asn Ser

<210> 1929  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<400> 1929  
 Met Leu Leu Leu Leu His Ile His Val Phe Gly His Ser Val Pro Ala  
 1 5 10 15  
 Ala Trp Ser Ala Ser Cys Val Gln Ile Leu Pro Val Leu Leu Arg Ile  
 20 25 30

Arg Ser Gln Ile Leu Ile His Thr Ile Leu Phe Ala Ala Tyr Thr Leu  
           35                                  40                                  45  
 Ala Phe Leu Asn Phe Phe Leu Ser Pro Asn Tyr Ala Val Phe Cys Leu  
           50                                  55                                  60  
 Ala Ile Val Leu Leu His Thr Ser Ser Phe Gly Leu Glu Tyr Pro Ser  
           65                                  70                                  75                                  80  
 Leu Cys Leu Phe Phe Leu Lys Glu Thr Gly Ser Gln Cys Gly Leu Val  
                                   85                                  90                                  95  
 Ser Asn Ser

<210> 1930

<211> 84

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (65)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1930

Met Trp Ser Ser Ser Trp Asp His Arg Ile Thr Thr Pro Arg Leu Ala  
       1                                  5                                  10                                  15  
 Asn Phe Phe Phe Phe Phe Phe Phe Phe Phe Phe Val Glu Met Gly Phe  
                                   20                                  25                                  30  
 Arg Tyr Val Gly Gln Ala Gly Leu Lys Leu Leu Ala Ser Ser Asn Leu  
           35                                  40                                  45  
 Pro Ala Leu Ala Ser Gln Ser Ala Gly Ile Thr Gly Val Ser His His  
           50                                  55                                  60  
 Xaa Trp Leu Gly Gly Leu Ile Lys Thr Pro Ile Leu Ser Leu Thr Pro  
       65                                  70                                  75                                  80  
 Arg Val Ser Gly

<210> 1931

<211> 178

<212> PRT

<213> Homo sapiens

<400> 1931

Met Ile Lys Arg Lys Val Asp Arg Glu Asp Lys Leu Asp Ile Pro Met  
       1                                  5                                  10                                  15  
 Phe Phe Gly Phe Val Gly Leu Phe Asn Leu Leu Leu Leu Trp Pro Gly  
           20                                  25                                  30

Phe Phe Leu Leu His Tyr Thr Gly Phe Glu Asp Phe Glu Phe Pro Asn  
           35                          40                          45  
 Lys Val Val Leu Met Cys Ile Ile Ile Asn Gly Leu Ile Gly Thr Val  
           50                          55                          60  
 Leu Ser Glu Phe Leu Trp Leu Trp Gly Cys Phe Leu Thr Ser Ser Leu  
           65                          70                          75                          80  
 Ile Gly Thr Leu Ala Leu Ser Leu Thr Ile Pro Leu Ser Ile Ile Ala  
                           85                          90                          95  
 Asp Met Cys Met Gln Lys Val Gln Phe Ser Trp Leu Phe Phe Ala Gly  
                           100                          105                          110  
 Ala Ile Pro Val Phe Phe Ser Phe Phe Ile Val Thr Leu Leu Cys His  
                           115                          120                          125  
 Tyr Asn Asn Trp Asp Pro Val Met Val Gly Ile Arg Arg Ile Phe Ala  
           130                          135                          140  
 Phe Ile Cys Arg Lys His Arg Ile Gln Arg Val Pro Glu Asp Ser Glu  
           145                          150                          155                          160  
 Gln Cys Glu Ser Leu Ile Ser Met His Ser Val Ser Gln Glu Asp Gly  
                           165                          170                          175  
 Ala Ser

&lt;210&gt; 1932

&lt;211&gt; 468

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (19)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (125)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1932

Met Asn Ser Gln Asn Ser Gly Phe Thr Gln Arg Arg Arg Met Ala Leu  
           1                          5                          10                          15

Gly Ile Xaa Ile Leu Leu Leu Val Asp Val Ile Trp Val Ala Ser Ser  
                           20                          25                          30

Glu Leu Thr Ser Tyr Val Phe Thr Gln Tyr Asn Lys Pro Phe Phe Ser  
           35                          40                          45

Thr Phe Ala Lys Thr Ser Met Phe Val Leu Tyr Leu Leu Gly Phe Ile  
           50                          55                          60

Ile Trp Lys Pro Trp Arg Gln Gln Cys Thr Arg Gly Leu Arg Gly Lys  
 65 70 75 80  
 His Ala Ala Phe Phe Ala Asp Ala Glu Gly Tyr Phe Ala Ala Cys Thr  
 85 90 95  
 Thr Asp Thr Thr Met Asn Ser Ser Leu Ser Glu Pro Leu Tyr Val Pro  
 100 105 110  
 Val Lys Phe His Asp Leu Pro Ser Glu Lys Pro Glu Xaa Thr Asn Ile  
 115 120 125  
 Asp Thr Glu Lys Thr Pro Lys Lys Ser Arg Val Arg Phe Ser Asn Ile  
 130 135 140  
 Met Glu Ile Arg Gln Leu Pro Ser Ser His Ala Leu Glu Ala Lys Leu  
 145 150 155 160  
 Ser Arg Met Ser Tyr Pro Val Lys Glu Gln Glu Ser Ile Leu Lys Thr  
 165 170 175  
 Val Gly Lys Leu Thr Ala Thr Gln Val Ala Lys Ile Ser Phe Phe Phe  
 180 185 190  
 Cys Phe Val Trp Phe Leu Ala Asn Leu Ser Tyr Gln Glu Ala Leu Ser  
 195 200 205  
 Asp Thr Gln Val Ala Ile Val Asn Ile Leu Ser Ser Thr Ser Gly Leu  
 210 215 220  
 Phe Thr Leu Ile Leu Ala Ala Val Phe Pro Ser Asn Ser Gly Asp Arg  
 225 230 235 240  
 Phe Thr Leu Ser Lys Leu Leu Ala Val Ile Leu Ser Ile Gly Gly Val  
 245 250 255  
 Val Leu Val Asn Leu Ala Gly Ser Glu Lys Pro Ala Gly Arg Asp Thr  
 260 265 270  
 Val Gly Ser Ile Trp Ser Leu Ala Gly Ala Met Leu Tyr Ala Val Tyr  
 275 280 285  
 Ile Val Met Ile Lys Arg Lys Val Asp Arg Glu Asp Lys Leu Asp Ile  
 290 295 300  
 Pro Met Phe Phe Gly Phe Val Gly Leu Phe Asn Leu Leu Leu Leu Trp  
 305 310 315 320  
 Pro Gly Phe Phe Leu Leu His Tyr Thr Gly Phe Glu Asp Phe Glu Phe  
 325 330 335  
 Pro Asn Lys Val Val Leu Met Cys Ile Ile Ile Asn Gly Leu Ile Gly  
 340 345 350  
 Thr Val Leu Ser Glu Phe Leu Trp Leu Trp Gly Cys Phe Leu Thr Ser  
 355 360 365  
 Ser Leu Ile Gly Thr Leu Ala Leu Ser Leu Thr Ile Pro Leu Ser Ile  
 370 375 380

Ile Ala Asp Met Cys Met Gln Lys Val Gln Phe Ser Trp Leu Phe Phe  
 385 390 395 400  
 Ala Gly Ala Ile Pro Val Phe Phe Ser Phe Phe Ile Val Thr Leu Leu  
 405 410 415  
 Cys His Tyr Asn Asn Trp Asp Pro Val Met Val Gly Ile Arg Arg Ile  
 420 425 430  
 Phe Ala Phe Ile Cys Arg Lys His Arg Ile Gln Arg Val Pro Glu Asp  
 435 440 445  
 Ser Glu Gln Cys Glu Ser Leu Ile Ser Met His Ser Val Ser Gln Glu  
 450 455 460  
 Asp Gly Ala Ser  
 465

<210> 1933  
 <211> 178  
 <212> PRT  
 <213> Homo sapiens

<400> 1933  
 Met Ile Lys Arg Lys Val Asp Arg Glu Asp Lys Leu Asp Ile Pro Met  
 1 5 10 15  
 Phe Phe Gly Phe Val Gly Leu Phe Asn Leu Leu Leu Leu Trp Pro Gly  
 20 25 30  
 Phe Phe Leu Leu His Tyr Thr Gly Phe Glu Asp Phe Glu Phe Pro Asn  
 35 40 45  
 Lys Val Val Leu Met Cys Ile Ile Ile Asn Gly Leu Ile Gly Thr Val  
 50 55 60  
 Leu Ser Glu Phe Leu Trp Leu Trp Gly Cys Phe Leu Thr Ser Ser Leu  
 65 70 75 80  
 Ile Gly Thr Leu Ala Leu Ser Leu Thr Ile Pro Leu Ser Ile Ile Ala  
 85 90 95  
 Asp Met Cys Met Gln Lys Val Gln Phe Ser Trp Leu Phe Phe Ala Gly  
 100 105 110  
 Ala Ile Pro Val Phe Phe Ser Phe Phe Ile Val Thr Leu Leu Cys His  
 115 120 125  
 Tyr Asn Asn Trp Asp Pro Val Met Val Gly Ile Arg Arg Ile Phe Ala  
 130 135 140  
 Phe Ile Cys Arg Lys His Arg Ile Gln Arg Val Pro Glu Asp Ser Glu  
 145 150 155 160  
 Gln Cys Glu Ser Leu Ile Ser Met His Ser Val Ser Gln Glu Asp Gly  
 165 170 175



Ala Ser

&lt;210&gt; 1934

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (95)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (112)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1934

Met	Leu	Val	Ala	Trp	Cys	Leu	Ala	Pro	Gly	Asp	Leu	Leu	Leu	Val
1				5					10				15	

Ile	Ile	Thr	Leu	Pro	Arg	Lys	Glu	Val	Thr	Gly	Ser	Met	Ser	Thr	Val
			20					25					30		

Cys	Gln	Cys	Glu	Ala	Gln	Pro	Ala	Met	Leu	Pro	Lys	Gly	His	Phe	Thr
	35						40					45			

His	His	Ser	Pro	Lys	Ala	Ala	Arg	Lys	Ala	Gln	Glu	Gly	Thr	Arg	Lys
	50					55					60				

Ala	Arg	Trp	Val	Ala	Leu	Glu	Asp	Ser	Ala	Pro	Phe	His	Pro	Ser	Pro
65					70					75					80

Gly	Trp	Gly	Leu	Ile	Leu	Gln	Leu	His	Pro	Gln	Pro	Met	Asn	Xaa	Ser
			85						90					95	

Gln	Ser	Ala	Trp	Lys	His	Cys	Cys	Trp	Lys	Asn	Cys	Glu	Glu	Pro	Xaa
			100					105					110		

Glu	Gly	Lys	Lys
		115	

&lt;210&gt; 1935

&lt;211&gt; 74

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (69)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1935

Lys	Thr	Pro	His	Ser	Trp	Val	Ile	His	Ala	Gly	Glu	Ala	Ser	Cys	His
1				5					10					15	

Val Glu Arg Thr Leu Lys Gln Ser Tyr Gly Ala Ala His Met Arg Gly  
                   20                  25                  30

Thr Glu Ala Pro Ser His Gln Pro Cys Glu Pro Pro Trp Lys Trp Ser  
                   35                  40                  45

Leu Gln His Gln Ser Ser Phe Gln Met Ile Ala Ala Pro Asn Thr Ile  
           50                  55                  60

Leu Thr Ser Ile Xaa Arg Thr Ser Ala Ser  
       65                  70

<210> 1936

<211> 127

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (85)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (88)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (95)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (107)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (123)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1936

Met Lys Arg Glu Gly Arg Cys Val Leu His Met His Pro Ser Ser Pro  
   1                  5                  10                  15

Pro Ser Arg Leu Ser Phe Phe Leu Phe Leu Arg Gln Ser Leu Ala Leu  
                   20                  25                  30

Leu Pro Arg Leu Glu Cys Ser Gly Val Ile Leu Ala Gln Arg Asn Leu  
           35                  40                  45

Arg Leu Leu Gly Ser Arg Asp Ser Pro Ala Ser Ala Ser Cys Cys Pro  
       50                  55                  60

Pro Ser Ser Leu Ser Arg Arg Trp Arg Trp Arg Glu Val Pro Glu Gly  
       65                  70                  75                  80

Leu Trp Gly Leu Xaa Trp Val Xaa Leu Cys Ser Leu Ser Ala Xaa Trp  
                             85                            90                            95

Thr Ala Leu Lys Gly Ser Ser Pro Pro Phe Xaa Ala Lys Gln Leu Gly  
                             100                            105                            110

His His Arg Asn Gly Ile Asn Leu Ala Glu Xaa Ser Leu Pro Lys  
                             115                            120                            125

<210> 1937

<211> 44

<212> PRT

<213> Homo sapiens

<400> 1937

Leu Met Pro Val Ile Pro Ala Ile Trp Glu Thr Glu Ala Gly Gly Leu  
   1                            5                            10                            15

Leu Glu Ala Arg Ser Leu Arg Gln Pro Gly Gln His Ser Glu Thr Pro  
                             20                            25                            30

Ser Leu Gln Glu Thr Phe Lys Asn Lys Asn Ser Ser  
                             35                            40

<210> 1938

<211> 89

<212> PRT

<213> Homo sapiens

<400> 1938

Met Asn His Arg Ala Trp Pro Phe Leu Pro Phe Phe Phe Phe Phe Leu  
   1                            5                            10                            15

Arg Arg Ser Leu Ala Leu Ser Pro Arg Leu Glu Cys Ser Gly Ala Val  
                             20                            25                            30

Ser Ala His Cys Gly Leu Arg Leu Pro Gly Ser Arg His Ser Pro Ala  
                             35                            40                            45

Ser Ala Ser Arg Val Ala Gly Thr Ala Gly Ala Arg Tyr His Ala Arg  
                             50                            55                            60

Leu Val Phe Phe Val Phe Leu Val Glu Thr Gly Phe His Arg Val Gly  
   65                            70                            75                            80

Gln Asp Gly Leu Asp Leu Leu Thr Ser  
                             85

<210> 1939

<211> 89

<212> PRT

<213> Homo sapiens

&lt;400&gt; 1939

```

Met Asn His Arg Ala Trp Pro Phe Leu Pro Phe Phe Phe Phe Phe Leu
 1           5           10           15
Arg Arg Ser Leu Ala Leu Ser Pro Arg Leu Glu Cys Ser Gly Ala Val
          20           25           30
Ser Ala His Cys Gly Leu Arg Leu Pro Gly Ser Arg His Ser Pro Ala
          35           40           45
Ser Ala Ser Arg Val Ala Gly Thr Ala Gly Ala Arg Tyr His Ala Arg
          50           55           60
Leu Val Phe Phe Val Phe Leu Val Glu Thr Gly Phe His Arg Val Gly
          65           70           75           80
Gln Asp Gly Leu Asp Leu Leu Thr Ser
          85

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&lt;210&gt; 1940

&lt;211&gt; 223

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (159)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (208)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (218)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (221)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1940

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Met Leu His Val Thr Arg Gly Val Trp Gly Ser Arg Val Arg Val Trp
 1           5           10           15
Pro Leu Leu Pro Ala Leu Leu Gly Pro Pro Arg Ala Leu Ser Ser Leu
          20           25           30
Ala Ala Lys Met Gly Glu Tyr Arg Lys Met Trp Asn Pro Arg Glu Pro
          35           40           45
Arg Asp Trp Ala Gln Gln Tyr Arg Glu Arg Phe Ile Pro Phe Ser Lys
          50           55           60
Glu Gln Leu Leu Arg Leu Leu Ile Gln Ala Leu Tyr Asp Pro Ile Asn

```

65		70		75		80
Pro Asp Arg Glu Thr Leu Asp Gln Pro Ser Leu Thr Asp Pro Gln Arg						
	85		90		95	
Leu Ser Asn Glu Gln Glu Val Leu Arg Ala Leu Glu Pro Leu Leu Ala						
	100		105		110	
Gln Ala Asn Phe Ser Pro Leu Ser Glu Asp Thr Leu Ala Tyr Ala Leu						
	115		120		125	
Val Val His His Pro Gln Asp Glu Val Gln Val Thr Val Asn Leu Asp						
	130		135		140	
Gln Tyr Val Tyr Ile His Phe Trp Ala Leu Gly Gln Pro Ser Xaa Ala						
	145		150		155	160
Asp Ala Pro Glu Val Gln Arg Gly Leu Gln Ala Cys Leu Leu Ser Pro						
	165		170		175	
Lys Leu Pro Leu Arg Glu Arg Arg Tyr Phe Lys Arg Val Val Leu Ala						
	180		185		190	
Ser Pro Asp Gln Asn Gly Asp Thr Trp Asp Leu Lys Lys Phe Ser Xaa						
	195		200		205	
Thr Pro Pro Leu Gly Lys Ala Trp Glu Xaa Leu Leu Xaa Gly Thr						
	210		215		220	

&lt;210&gt; 1941

&lt;211&gt; 169

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (4)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (18)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (24)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (108)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1941

Ser Pro Lys Xaa Pro Pro Ala Glu Arg Arg Tyr Phe Lys Arg Val Val
1 5 10 15

Leu Xaa Ala Arg Thr Lys Arg Xaa His Leu Val Leu Lys Ser Phe Lys  
                   20                  25                  30  
 Asp Thr Pro Leu Glu Gly Leu Glu Gln Leu Leu Pro Glu Leu Lys Val  
                   35                  40                  45  
 Arg Thr Pro Thr Leu Gln Arg Ala Leu Leu Asn Leu Met Leu Val Val  
                   50                  55                  60  
 Ser Gly Val Ala Ile Phe Val Asn Val Gly Met Val Val Leu Thr Asp  
                   65                  70                  75                  80  
 Leu Lys Val Ala Thr Ser Leu Leu Leu Leu Phe Ala Ile Phe Met  
                   85                  90                  95  
 Gly Leu Arg Ala Ser Lys Cys Arg Ala Ala Leu Xaa Ser Cys Thr Gly  
                   100                  105                  110  
 Cys Ser Pro Ser Lys Asp Ser Trp Pro Arg Gly Gln Val Glu Ala Asp  
                   115                  120                  125  
 Thr Gln Leu Val Ser Ala Cys Gln Asn Ala Cys Pro Val Ser Arg Leu  
                   130                  135                  140  
 Ser Gln Pro Arg Gly Glu Leu Pro Phe Thr Asp Ser Ser Gln Gly Trp  
                   145                  150                  155                  160  
 His Arg Pro Gln Glu Cys Arg Leu Val  
                   165

&lt;210&gt; 1942

&lt;211&gt; 327

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1942

Met Leu His Val Thr Arg Gly Val Trp Gly Ser Arg Val Arg Val Trp  
                   1                  5                  10                  15  
 Pro Leu Leu Pro Ala Leu Leu Gly Pro Pro Arg Ala Leu Ser Ser Leu  
                   20                  25                  30  
 Ala Ala Lys Met Gly Glu Tyr Arg Lys Met Trp Asn Pro Arg Glu Pro  
                   35                  40                  45  
 Arg Asp Trp Ala Gln Gln Tyr Arg Glu Arg Phe Ile Pro Phe Ser Lys  
                   50                  55                  60  
 Glu Gln Leu Leu Arg Leu Leu Ile Gln Ala Leu Tyr Asp Pro Ile Asn  
                   65                  70                  75                  80  
 Pro Asp Arg Glu Thr Leu Asp Gln Pro Ser Leu Thr Asp Pro Gln Arg  
                   85                  90                  95  
 Leu Ser Asn Glu Gln Glu Val Leu Arg Ala Leu Glu Pro Leu Leu Ala  
                   100                  105                  110  
 Gln Ala Asn Phe Ser Pro Leu Ser Glu Asp Thr Leu Ala Tyr Ala Leu

115	120	125
Val Val His His Pro Gln Asp Glu Val Gln Val Thr Val Asn Leu Asp		
130	135	140
Gln Tyr Val Tyr Ile His Phe Trp Ala Leu Gly Gln Arg Val Gly Gln		
145	150	155
Met Pro Leu Lys Ser Ser Val Gly Ser Arg Arg Val Phe Phe Thr Lys		
165	170	175
Leu Pro Pro Ala Glu Arg Arg Tyr Phe Lys Arg Val Val Leu Ala Ala		
180	185	190
Arg Thr Lys Arg Gly His Leu Val Leu Lys Ser Phe Lys Asp Thr Pro		
195	200	205
Leu Glu Gly Leu Glu Gln Leu Leu Pro Glu Leu Lys Val Arg Thr Pro		
210	215	220
Thr Leu Gln Arg Ala Leu Leu Asn Leu Met Leu Val Val Ser Gly Val		
225	230	235
Ala Ile Phe Val Asn Val Gly Met Val Val Leu Thr Asp Leu Lys Val		
245	250	255
Ala Thr Ser Leu Leu Leu Leu Leu Phe Ala Ile Phe Met Gly Leu Arg		
260	265	270
Ala Ser Lys Cys Arg Ala Ala Leu Asn Ser Cys Thr Gly Cys Ser Pro		
275	280	285
Ser Lys Asp Ser Trp Pro Arg Gly Gln Val Glu Ala Asp Thr Gln Leu		
290	295	300
Val Leu Arg Leu Pro Lys Cys Val Ser Cys Leu Glu Ala Glu Ser Ala		
305	310	315
Gln Arg Gly Ala Ala Phe Tyr		
325		

&lt;210&gt; 1943

&lt;211&gt; 118

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1943

Met Lys Asp Leu Trp Phe Leu Leu Leu Val Val Ala Ala Pro Thr Trp
1 5 10 15

Val Leu Ser Gln Val Arg Leu Gln Glu Ser Gly Pro Gly Leu Val Ser
20 25 30

Pro Ser Gln Thr Leu Ser Leu Thr Cys Ser Val Ser Gly Ile Asn Ile
35 40 45

Gly Gly Gly Lys Tyr Tyr Trp Ala Trp Val Arg Gln Arg Pro Gly Glu
50 55 60

Gly Pro Glu Trp Val Gly Tyr Ile Ser Tyr Thr Gly Val Ala Asp Tyr  
 65 70 75 80  
 Asn Pro Ser Leu Arg Gly Arg Leu Thr Ile Ser Leu Gly Glu Ser Asn  
 85 90 95  
 Ser Phe Ser Leu Thr Leu Thr Ser Met Thr Ala Ala Asp Ala Val Val  
 100 105 110  
 Tyr Tyr Cys Ala Thr Asp  
 115

<210> 1944  
 <211> 174  
 <212> PRT  
 <213> Homo sapiens

<400> 1944  
 Lys Gly Val Phe Tyr Phe Phe Ile Phe Tyr Leu Pro Leu Phe Ser Trp  
 1 5 10 15  
 Leu Cys Ser Arg Val Cys Val Phe Ala Cys Leu Leu Ser Cys Ser Phe  
 20 25 30  
 Phe Phe Trp Met Lys Thr Pro Ala Phe Pro Asp Ser Pro Pro Ser Ser  
 35 40 45  
 Val Leu Gln Phe Ser Glu Lys Ser Trp Asp Met Trp Glu Gly Ala Trp  
 50 55 60  
 Glu Leu Gly Ser Leu Arg Leu Pro Gly Arg Gln Phe Arg Leu Cys Arg  
 65 70 75 80  
 Lys Glu Gln Ser Pro Trp Glu Ala Leu Gly Glu Gly Gly Ala Ala Gly  
 85 90 95  
 Pro Ala Arg Met Val Leu Pro Ala Thr Gly Gly Leu Arg Val Val Ser  
 100 105 110  
 Ala Pro Cys Ile Ser Pro Ser Leu Leu Thr Phe Leu Leu Cys Phe Pro  
 115 120 125  
 Pro Ser Val Cys Gln Arg Gly Gly Thr Gly Asn Arg Thr Ala Val Ala  
 130 135 140  
 Ala Leu Ser Leu Leu Ser Thr Val Tyr Ser Gly Leu Ser Gly Asp Ser  
 145 150 155 160  
 Arg Glu Pro Gly His Leu Ala Ala Val Arg Pro Leu Asn Leu  
 165 170

<210> 1945  
 <211> 162  
 <212> PRT  
 <213> Homo sapiens



<220>  
 <221> SITE  
 <222> (115)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (143)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 1945  
 Met Ala Ser Ala Leu Ser Tyr Val Ser Lys Phe Lys Ser Phe Val Ile  
   1                  5                  10                  15  
 Leu Phe Val Thr Pro Leu Leu Leu Leu Pro Leu Val Ile Leu Met Pro  
                   20                  25                  30  
 Ala Lys Val Cys Val Gln Tyr Met Lys Asp Thr Asn Met Leu Phe Leu  
                   35                  40                  45  
 Gly Gly Leu Ile Val Ala Val Ala Val Glu Arg Trp Asn Leu His Lys  
   50                  55                  60  
 Arg Ile Ala Leu Arg Thr Leu Leu Trp Val Gly Ala Lys Pro Ala Arg  
   65                  70                  75                  80  
 Leu Met Leu Gly Phe Met Gly Val Thr Ala Leu Leu Ser Met Trp Ile  
                   85                  90                  95  
 Ser Asn Thr Ala Thr Thr Ala Met Met Val Pro Ile Val Glu Ala Ile  
                   100                  105                  110  
 Leu Gln Xaa Met Glu Ala Thr Ser Ala Ala Thr Glu Ala Gly Leu Glu  
                   115                  120                  125  
 Leu Val Asp Lys Gly Lys Ala Lys Glu Leu Pro Gly Ser Gln Xaa Ile  
   130                  135                  140  
 Phe Glu Gly Pro Thr Leu Gly Gln Gln Glu Asp Gln Arg Ala Glu Glu  
   145                  150                  155                  160  
 Val Val

<210> 1946  
 <211> 173  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (59)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (130)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1946

Glu	Glu	Pro	Gln	Asp	His	Thr	His	Ser	Pro	Tyr	Pro	Pro	Gln	Asp	Tyr
1				5					10					15	
Arg	Thr	Phe	Trp	His	Thr	Leu	Tyr	Arg	Val	Leu	Gly	Phe	Thr	Pro	Gln
			20					25					30		
Asn	Asp	Pro	Thr	Met	Ser	Thr	His	His	Gln	Asn	Pro	Ala	Asn	Gly	Pro
		35					40					45			
Pro	Leu	Pro	Pro	Ser	Pro	Asp	Ala	Glu	Met	Xaa	Met	Gly	Ser	Trp	Arg
	50					55					60				
Val	Gly	Ser	Glu	Met	Lys	Gly	Thr	Pro	Gln	Trp	Ala	Ala	Gly	Pro	Ile
65					70					75					80
Phe	Pro	Lys	Pro	Cys	His	Tyr	Leu	Cys	Glu	Gly	Gly	Gln	Val	Ala	Glu
				85					90					95	
Gly	Ser	Gly	Cys	Arg	Leu	Leu	Tyr	Pro	Leu	Cys	Leu	Lys	His	Pro	Pro
			100					105					110		
His	Arg	Ala	Leu	Val	Phe	Thr	Arg	Phe	Val	Leu	Asp	Ser	Leu	Asn	Gly
		115					120					125			
Asn	Xaa	Ile	Pro	Trp	Leu	Arg	Ala	Lys	Thr	Thr	Thr	Tyr	Gln	Cys	Pro
	130					135					140				
Cys	Pro	Phe	Gln	Leu	Thr	Leu	Ser	Ser	Leu	Arg	Ser	Ser	Leu	Ser	Leu
145					150					155					160
Trp	Lys	Gly	His	Pro	Ser	Gln	Gly	Arg	Asn	Ala	Trp	Ser			
				165					170						

<210> 1947

<211> 407

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (193)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (357)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1947

Met	Ala	Ser	Ala	Leu	Ser	Tyr	Val	Ser	Lys	Phe	Lys	Ser	Phe	Val	Ile
1				5					10					15	
Leu	Phe	Val	Thr	Pro	Leu	Leu	Leu	Pro	Leu	Val	Ile	Leu	Met	Pro	
			20					25					30		

Ala Lys Val Cys Val Gln Tyr Met Lys Asp Thr Asn Met Leu Phe Leu  
           35                                  40                                  45  
 Gly Gly Leu Ile Val Ala Val Ala Val Glu Arg Trp Asn Leu His Lys  
           50                                  55                                  60  
 Arg Ile Ala Leu Arg Thr Leu Leu Trp Val Gly Ala Lys Pro Ala Arg  
       65                                  70                                  75                                  80  
 Leu Met Leu Gly Phe Met Gly Val Thr Ala Leu Leu Ser Met Trp Ile  
                                   85                                  90                                  95  
 Ser Asn Thr Ala Thr Thr Ala Met Met Val Pro Ile Val Glu Ala Ile  
                                  100                                 105                                 110  
 Leu Gln Gln Met Glu Ala Thr Ser Ala Ala Thr Glu Ala Gly Leu Glu  
                                  115                                 120                                 125  
 Leu Val Asp Lys Gly Lys Ala Lys Glu Leu Pro Gly Ser Gln Val Ile  
       130                                 135                                 140  
 Phe Glu Gly Pro Thr Leu Gly Gln Gln Glu Asp Gln Glu Arg Lys Arg  
      145                                 150                                 155                                 160  
 Leu Cys Lys Ala Met Thr Leu Cys Ile Cys Tyr Ala Ala Ser Ile Gly  
                                  165                                 170                                 175  
 Gly Thr Ala Thr Leu Thr Gly Thr Gly Pro Asn Val Val Leu Leu Gly  
                                  180                                 185                                 190  
 Xaa Met Asn Glu Leu Phe Pro Asp Ser Lys Asp Leu Val Asn Phe Ala  
      195                                 200                                 205  
 Ser Trp Phe Ala Phe Ala Phe Pro Asn Met Leu Val Met Leu Leu Phe  
      210                                 215                                 220  
 Ala Trp Leu Trp Leu Gln Phe Val Tyr Met Arg Phe Lys Tyr Val Ser  
      225                                 230                                 235                                 240  
 Asp Ala Thr Val Ala Ile Phe Val Ala Thr Leu Leu Phe Ile Val Pro  
                                  245                                 250                                 255  
 Ser Gln Lys Pro Lys Phe Asn Phe Arg Ser Gln Thr Glu Glu Glu Arg  
                                  260                                 265                                 270  
 Lys Thr Pro Phe Tyr Pro Pro Pro Leu Leu Asp Trp Lys Val Thr Gln  
                                  275                                 280                                 285  
 Glu Lys Val Pro Trp Gly Ile Val Leu Leu Leu Gly Gly Gly Phe Ala  
      290                                 295                                 300  
 Leu Ala Lys Gly Ser Glu Ala Ser Gly Leu Ser Val Trp Met Gly Lys  
      305                                 310                                 315                                 320  
 Gln Met Glu Pro Leu His Ala Val Pro Pro Ala Ala Ile Thr Leu Ile  
                                  325                                 330                                 335  
 Leu Ser Leu Leu Val Ala Val Phe Thr Glu Cys Thr Ser Asn Val Ala  
                                  340                                 345                                 350

Thr Thr Thr Leu Xaa Leu Pro Ile Phe Ala Ser Met Val Lys Thr Gly  
 355 360 365

Val Ile Met Asn Ile Ile Gly Val Phe Cys Val Phe Leu Ala Val Asn  
 370 375 380

Thr Trp Gly Arg Ala Ile Phe Asp Leu Asp His Phe Pro Asp Trp Ala  
 385 390 395 400

Asn Val Thr His Ile Glu Thr  
 405

<210> 1948  
 <211> 162  
 <212> PRT  
 <213> Homo sapiens

<400> 1948  
 Met Ala Ser Ala Leu Ser Tyr Val Ser Lys Phe Lys Ser Phe Val Ile  
 1 5 10 15

Leu Phe Val Thr Pro Leu Leu Leu Leu Pro Leu Val Ile Leu Met Pro  
 20 25 30

Ala Lys Val Cys Val Gln Tyr Met Lys Asp Thr Asn Met Leu Phe Leu  
 35 40 45

Gly Gly Leu Ile Val Ala Val Ala Val Glu Arg Trp Asn Leu His Lys  
 50 55 60

Arg Ile Ala Leu Arg Thr Leu Leu Trp Val Gly Ala Lys Pro Ala Arg  
 65 70 75 80

Leu Met Leu Gly Phe Met Gly Val Thr Ala Leu Leu Ser Met Trp Ile  
 85 90 95

Ser Asn Thr Ala Thr Thr Ala Met Met Val Pro Ile Val Glu Ala Ile  
 100 105 110

Leu Gln Gln Met Glu Ala Thr Ser Ala Ala Thr Glu Ala Gly Leu Glu  
 115 120 125

Leu Val Asp Lys Gly Lys Ala Lys Glu Leu Pro Gly Ser Gln Val Ile  
 130 135 140

Phe Glu Gly Pro Thr Leu Gly Gln Gln Glu Asp Gln Glu Arg Lys Arg  
 145 150 155 160

Leu Cys

<210> 1949  
 <211> 377  
 <212> PRT  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (327)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1949

Met	Pro	Ala	Lys	Val	Cys	Val	Gln	Tyr	Met	Lys	Asp	Thr	Asn	Met	Leu
1				5					10					15	
Phe	Leu	Gly	Gly	Leu	Ile	Val	Ala	Val	Ala	Val	Glu	Arg	Trp	Asn	Leu
		20					25						30		
His	Lys	Arg	Ile	Ala	Leu	Arg	Thr	Leu	Leu	Trp	Val	Gly	Ala	Lys	Pro
		35					40					45			
Ala	Arg	Leu	Met	Leu	Gly	Phe	Met	Gly	Val	Thr	Ala	Leu	Leu	Ser	Met
	50					55					60				
Trp	Ile	Ser	Asn	Thr	Ala	Thr	Thr	Ala	Met	Met	Val	Pro	Ile	Val	Glu
65					70					75					80
Ala	Ile	Leu	Gln	Gln	Met	Glu	Ala	Thr	Ser	Ala	Ala	Thr	Glu	Ala	Gly
				85					90					95	
Leu	Glu	Leu	Val	Asp	Lys	Gly	Lys	Ala	Lys	Glu	Leu	Pro	Gly	Ser	Gln
			100					105					110		
Val	Ile	Phe	Glu	Gly	Pro	Thr	Leu	Gly	Gln	Gln	Glu	Asp	Gln	Glu	Arg
		115					120					125			
Lys	Arg	Leu	Cys	Lys	Ala	Met	Thr	Leu	Cys	Ile	Cys	Tyr	Ala	Ala	Ser
		130				135					140				
Ile	Gly	Gly	Thr	Ala	Thr	Leu	Thr	Gly	Thr	Gly	Pro	Asn	Val	Val	Leu
145					150					155					160
Leu	Gly	Gln	Met	Asn	Glu	Leu	Phe	Pro	Asp	Ser	Lys	Asp	Leu	Val	Asn
				165					170					175	
Phe	Ala	Ser	Trp	Phe	Ala	Phe	Ala	Phe	Pro	Asn	Met	Leu	Val	Met	Leu
			180					185					190		
Leu	Phe	Ala	Trp	Leu	Trp	Leu	Gln	Phe	Val	Tyr	Met	Arg	Phe	Lys	Tyr
		195					200					205			
Val	Ser	Asp	Ala	Thr	Val	Ala	Ile	Phe	Val	Ala	Thr	Leu	Leu	Phe	Ile
		210				215					220				
Val	Pro	Ser	Gln	Lys	Pro	Lys	Phe	Asn	Phe	Arg	Ser	Gln	Thr	Glu	Glu
225					230					235					240
Glu	Arg	Lys	Thr	Pro	Phe	Tyr	Pro	Pro	Pro	Leu	Leu	Asp	Trp	Lys	Val
				245					250					255	
Thr	Gln	Glu	Lys	Val	Pro	Trp	Gly	Ile	Val	Leu	Leu	Leu	Gly	Gly	Gly
			260					265					270		
Phe	Ala	Leu	Ala	Lys	Gly	Ser	Glu	Ala	Ser	Gly	Leu	Ser	Val	Trp	Met
		275					280					285			

Gly Lys Gln Met Glu Pro Leu His Ala Val Pro Pro Ala Ala Ile Thr  
 290 295 300  
 Leu Ile Leu Ser Leu Leu Val Ala Val Phe Thr Glu Cys Thr Ser Asn  
 305 310 315 320  
 Val Ala Thr Thr Thr Leu Xaa Leu Pro Ile Phe Ala Ser Met Val Lys  
 325 330 335  
 Thr Gly Val Ile Met Asn Ile Ile Gly Val Phe Cys Val Phe Leu Ala  
 340 345 350  
 Val Asn Thr Trp Gly Arg Ala Ile Phe Asp Leu Asp His Phe Pro Asp  
 355 360 365  
 Trp Ala Asn Val Thr His Ile Glu Thr  
 370 375

<210> 1950

<211> 104

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (63)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (74)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (103)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1950

Met Ser Leu Leu Leu Leu Ser Val Leu Met Ser Pro Gly Ala Arg  
 1 5 10 15

Pro Ser Asp Pro Val Glu Val Ile Ala Ser Gly Pro Thr Val Ala Ser  
 20 25 30

Ser His Asn Val Gln Asp Cys Leu His Ile Leu Asn Arg Tyr Gly Leu  
 35 40 45

Arg Ala Ala Leu Pro Arg Ser Val Lys Thr Val Leu Ser Arg Xaa Asp  
 50 55 60

Ser Asp Pro His Gly Pro His Thr Cys Xaa His Val Leu Asn Val Ile  
 65 70 75 80

Ile Gly Ser Asn Val Leu Ala Leu Ala Glu Ala Gln Arg Gln Ala Glu  
 85 90 95

Ala Leu Gly Tyr Lys Leu Xaa Cys

100

&lt;210&gt; 1951

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1951

Gln Val Pro Met Ser Trp Thr Pro Thr Ser Cys Ser Cys Gly Leu Gly  
 1 5 10 15

Asp Gly Ile Gly His Ile Leu Gly Val Gln Arg Arg Pro Thr Arg Ala  
 20 25 30

Arg Ser Asp Gly Arg Ala Ser Gln Thr Gly Arg Trp Gly Leu Pro Pro  
 35 40 45

Thr Pro Glu Asp Glu Asp Lys Pro Leu Gly Gln Phe Ser Val Pro Val  
 50 55 60

Leu Leu Pro Trp Ala Ala Ser Leu Leu Ser Pro Ser Pro Cys Phe Phe  
 65 70 75 80

Leu

&lt;210&gt; 1952

&lt;211&gt; 295

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1952

Met Ser Leu Leu Leu Leu Ser Val Leu Met Ser Pro Gly Ala Arg  
 1 5 10 15

Pro Ser Asp Pro Val Glu Val Ile Ala Ser Gly Pro Thr Val Ala Ser  
 20 25 30

Ser His Asn Val Gln Asp Cys Leu His Ile Leu Asn Arg Tyr Gly Leu  
 35 40 45

Arg Ala Ala Leu Pro Arg Ser Val Lys Thr Val Leu Ser Arg Ala Asp  
 50 55 60

Ser Asp Pro His Gly Pro His Thr Cys Gly His Val Leu Asn Val Ile  
 65 70 75 80

Ile Gly Ser Asn Val Leu Ala Leu Ala Glu Ala Gln Arg Gln Ala Glu  
 85 90 95

Ala Leu Gly Tyr Gln Ala Val Val Leu Ser Ala Ala Met Gln Gly Asp  
 100 105 110

Val Lys Ser Met Ala Gln Phe Tyr Gly Leu Leu Ala His Val Ala Arg  
 115 120 125

1265

Thr Arg Leu Thr Pro Ser Met Ala Gly Ala Ser Val Glu Glu Asp Ala  
 130 135 140  
 Gln Leu His Glu Leu Ala Ala Glu Leu Gln Ile Pro Asp Leu Gln Leu  
 145 150 155 160  
 Glu Glu Ala Leu Glu Thr Met Ala Trp Gly Arg Gly Pro Val Cys Leu  
 165 170 175  
 Leu Ala Gly Gly Glu Pro Thr Val Gln Leu Gln Gly Ser Gly Arg Gly  
 180 185 190  
 Gly Arg Asn Gln Glu Leu Ala Leu Arg Val Gly Ala Glu Leu Arg Arg  
 195 200 205  
 Trp Pro Leu Gly Pro Ile Asp Val Leu Phe Leu Ser Gly Gly Thr Asp  
 210 215 220  
 Gly Gln Asp Gly Pro Thr Glu Ala Ala Gly Ala Trp Val Thr Pro Glu  
 225 230 235 240  
 Leu Ala Ser Gln Ala Ala Ala Glu Gly Leu Asp Ile Ala Thr Phe Leu  
 245 250 255  
 Ala His Asn Asp Ser His Thr Phe Phe Cys Cys Leu Gln Gly Gly Ala  
 260 265 270  
 His Leu Leu His Thr Gly Met Thr Gly Thr Asn Val Met Asp Thr His  
 275 280 285  
 Leu Leu Phe Leu Arg Pro Arg  
 290 295

&lt;210&gt; 1953

&lt;211&gt; 116

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1953

Met Trp Trp Ala Leu Cys Ser Met Leu Pro Leu Leu Gly Cys Ala Cys  
 1 5 10 15  
 Ser Ser Gly Cys Trp Gly Ser Gly Pro Thr Pro Leu Leu Ala Glu Pro  
 20 25 30  
 Thr Phe Leu Cys Val Ser Ser Arg Pro His Asn Pro Leu Ser Phe Leu  
 35 40 45  
 Ser Val Leu Pro Cys Ser Arg Gly Pro Gly Pro Ser Gly Leu Gln Gly  
 50 55 60  
 Asp Gly Ala Gly Leu Pro Ala His Leu Gly Pro Leu Ser Cys Ile Cys  
 65 70 75 80  
 Leu Pro Ser Leu Leu Cys Asp Leu Gly Glu Arg Gln Cys Pro Leu Trp  
 85 90 95  
 Ala Val Arg Ser Thr Gln Cys Leu Ile Ala Gly Lys Lys Val Leu Gln



100 105 110

Arg Leu Cys Pro  
115

<210> 1954  
<211> 116  
<212> PRT  
<213> Homo sapiens

<400> 1954  
Met Trp Trp Ala Leu Cys Ser Met Leu Pro Leu Leu Gly Cys Ala Cys  
1 5 10 15  
Ser Ser Gly Cys Trp Gly Ser Gly Pro Thr Pro Leu Leu Ala Glu Pro  
20 25 30  
Thr Phe Leu Cys Val Ser Ser Arg Pro His Asn Pro Leu Ser Phe Leu  
35 40 45  
Ser Val Leu Pro Cys Ser Arg Gly Pro Gly Pro Ser Gly Leu Gln Gly  
50 55 60  
Asp Gly Ala Gly Leu Pro Ala His Leu Gly Pro Leu Ser Cys Ile Cys  
65 70 75 80  
Leu Pro Ser Leu Leu Cys Asp Leu Gly Glu Arg Gln Cys Pro Leu Trp  
85 90 95  
Ala Val Arg Ser Thr Gln Cys Leu Ile Ala Gly Lys Lys Val Leu Gln  
100 105 110  
Arg Leu Cys Pro  
115

<210> 1955  
<211> 116  
<212> PRT  
<213> Homo sapiens

<400> 1955  
Met Trp Trp Ala Leu Cys Ser Met Leu Pro Leu Leu Gly Cys Ala Cys  
1 5 10 15  
Ser Ser Gly Cys Trp Gly Ser Gly Pro Thr Pro Leu Leu Ala Glu Pro  
20 25 30  
Thr Phe Leu Cys Val Ser Ser Arg Pro His Asn Pro Leu Ser Phe Leu  
35 40 45  
Ser Val Leu Pro Cys Ser Arg Gly Pro Gly Pro Ser Gly Leu Gln Gly  
50 55 60  
Asp Gly Ala Gly Leu Pro Ala His Leu Gly Pro Leu Ser Cys Ile Cys  
65 70 75 80

Leu Pro Ser Leu Leu Cys Asp Leu Gly Glu Arg Gln Cys Pro Leu Trp  
                             85                            90                            95

Ala Val Arg Ser Thr Gln Cys Leu Ile Ala Gly Lys Lys Val Leu Gln  
                             100                            105                            110

Arg Leu Cys Pro  
                             115

<210> 1956  
 <211> 82  
 <212> PRT  
 <213> Homo sapiens

<400> 1956  
 Met Ala Ile Pro Pro Phe Ile Met Asn Thr Leu Glu Lys Lys Ala Phe  
   1                            5                            10                            15

Leu Lys Arg Phe Pro Trp Met Ser Ala Pro Ile Gln Val Gly Leu Val  
                             20                            25                            30

Gly Phe Cys Leu Val Phe Ala Thr Pro Leu Cys Cys Ala Leu Phe Pro  
                             35                            40                            45

Gln Lys Ser Ser Met Ser Val Thr Ser Leu Glu Ala Glu Leu Gln Ala  
                             50                            55                            60

Lys Ile Gln Glu Ser His Pro Glu Leu Arg Arg Val Tyr Phe Asn Lys  
   65                            70                            75                            80

Gly Leu

<210> 1957  
 <211> 82  
 <212> PRT  
 <213> Homo sapiens

<400> 1957  
 Met Ala Ile Pro Pro Phe Ile Met Asn Thr Leu Glu Lys Lys Ala Phe  
   1                            5                            10                            15

Leu Lys Arg Phe Pro Trp Met Ser Ala Pro Ile Gln Val Gly Leu Val  
                             20                            25                            30

Gly Phe Cys Leu Val Phe Ala Thr Pro Leu Cys Cys Ala Leu Phe Pro  
                             35                            40                            45

Gln Lys Ser Ser Met Ser Val Thr Ser Leu Glu Ala Glu Leu Gln Ala  
                             50                            55                            60

Lys Ile Gln Glu Ser His Pro Glu Leu Arg Arg Val Tyr Phe Asn Lys  
   65                            70                            75                            80

Gly Leu

<210> 1958  
 <211> 18  
 <212> PRT  
 <213> Homo sapiens

<400> 1958  
 Met Arg Phe Ser Glu Ala Trp Thr Ser Pro Trp Cys Met Thr Leu Leu  
           1                  5                  10                  15

Thr Cys

<210> 1959  
 <211> 18  
 <212> PRT  
 <213> Homo sapiens

<400> 1959  
 Met Arg Phe Ser Glu Ala Trp Thr Ser Pro Trp Cys Met Thr Leu Leu  
           1                  5                  10                  15

Thr Cys

<210> 1960  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (8)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1960  
 Met Ser Met Ala Met Gly Ser Xaa Thr Leu Leu Leu Gly Trp Gly Pro  
           1                  5                  10                  15

Gly Pro Gly Trp Asp Cys Gly Val Met Arg Val Val Leu Cys Trp Leu  
                   20                  25                  30

Pro Gly Gly Asn Cys Gln Gly Glu Ser Ser Thr  
           35                  40

<210> 1961  
 <211> 79  
 <212> PRT  
 <213> Homo sapiens

<400> 1961  
 Ala Glu His His Gln Leu Ser Gln Val Leu Val Thr Cys Leu Gly Thr

1					5					10					15				
Cys	Met	Glu	Pro	Glu	Pro	Leu	Thr	Pro	His	Pro	Arg	His	Tyr	Leu	Gly				
			20							25				30					
Asp	Ala	Gln	Asp	Lys	Cys	Ser	Asn	Asp	Cys	Met	His	Cys	Leu	Ser	Ile				
			35							40				45					
Gly	Gln	His	Glu	Leu	Pro	Ser	Tyr	Ser	Cys	Gln	Pro	Gly	Arg	Lys	Arg				
			50							55				60					
Leu	Leu	Pro	His	His	Ser	Gln	Pro	Ser	Phe	Pro	Leu	Ala	Ser	Thr					
			65							70				75					

<210> 1962

<211> 305

<212> PRT

<213> Homo sapiens

<400> 1962

Met 1	Pro	Ala	Asn	Phe 5	Thr	Glu	Gly	Ser	Phe 10	Asp	Ser	Ser	Gly	Thr 15	Gly
Gln	Thr	Leu	Asp 20	Ser	Ser	Pro	Val	Ala 25	Cys	Thr	Glu	Thr	Val 30	Thr	Phe
Thr	Glu	Val 35	Val	Glu	Gly	Lys	Glu 40	Trp	Gly	Ser	Phe	Tyr 45	Tyr	Ser	Phe
Lys	Thr 50	Glu	Gln	Leu	Ile	Thr 55	Leu	Trp	Val	Leu	Phe 60	Val	Phe	Thr	Ile
Val 65	Gly	Asn	Ser	Val	Val 70	Leu	Phe	Ser	Thr	Trp 75	Arg	Arg	Lys	Lys	Lys 80
Ser	Arg	Met	Thr	Phe 85	Phe	Val	Thr	Gln	Leu 90	Ala	Ile	Thr	Glu	Lys 95	Gln
Ala	Arg	Val	Leu 100	Ile	Val	Ile	Ala	Trp 105	Ser	Leu	Ser	Phe	Leu 110	Phe	Ser
Ile	Pro	Thr 115	Leu	Ile	Ile	Phe	Gly 120	Lys	Arg	Thr	Leu	Ser 125	Asn	Gly	Glu
Val 130	Gln	Cys	Trp	Ala	Leu	Trp 135	Pro	Asp	Asp	Ser	Tyr 140	Trp	Thr	Pro	Tyr
Met 145	Thr	Ile	Val	Ala	Phe 150	Leu	Val	Tyr	Phe	Ile 155	Pro	Leu	Thr	Ile	Ile 160
Ser	Ile	Met	Tyr	Gly 165	Ile	Val	Ile	Arg	Thr 170	Ile	Trp	Ile	Lys	Ser 175	Lys
Thr	Tyr	Glu	Thr 180	Val	Ile	Ser	Asn	Cys 185	Ser	Asp	Gly	Lys	Leu 190	Cys	Ser
Ser	Tyr	Asn 195	Arg	Gly	Leu	Ile	Ser 200	Lys	Ala	Lys	Ile	Lys 205	Ala	Ile	Lys

Tyr Ser Ile Ile Ile Ile Leu Ala Phe Ile Cys Cys Trp Ser Pro Tyr  
 210 215 220  
 Phe Leu Phe Asp Ile Leu Asp Asn Phe Asn Leu Leu Pro Asp Thr Gln  
 225 230 235 240  
 Glu Arg Phe Tyr Ala Ser Val Ile Ile Gln Asn Leu Pro Ala Leu Asn  
 245 250 255  
 Ser Ala Ile Asn Pro Leu Ile Tyr Cys Val Phe Ser Ser Ser Ile Ser  
 260 265 270  
 Phe Pro Cys Arg Glu Gln Arg Ser Gln Asp Ser Arg Met Thr Phe Arg  
 275 280 285  
 Glu Arg Thr Glu Arg His Glu Met Gln Ile Leu Ser Lys Pro Glu Phe  
 290 295 300  
 Ile  
 305

<210> 1963  
 <211> 43  
 <212> PRT  
 <213> Homo sapiens

<400> 1963  
 Met Ser Met Ala Met Gly Ser Ser Thr Leu Leu Leu Gly Trp Gly Pro  
 1 5 10 15  
 Gly Pro Gly Trp Asp Cys Gly Val Met Arg Val Val Leu Cys Trp Leu  
 20 25 30  
 Pro Gly Gly Asn Cys Gln Gly Glu Ser Ser Thr  
 35 40

<210> 1964  
 <211> 161  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (104)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1964  
 Met Pro Thr Thr Leu Pro Ser Asp Leu Met Leu Leu Trp Leu Gly Leu  
 1 5 10 15  
 Pro Ser Leu Pro Ser Pro Val Glu Glu Glu Gly Arg Leu Val Lys Gly  
 20 25 30  
 Leu Arg Leu Thr Leu Ala Ala Pro Ala Ser Glu Val Leu Pro Asp Trp  
 35 40 45

Glu Asp Pro Pro Ser His Pro Thr Ala Trp Ala Gln Pro Arg Thr His  
 50 55 60  
 Gln Pro Asp Thr Pro Asn Ser Ile Lys Ser Gly Ile Tyr Ser Pro Cys  
 65 70 75 80  
 Gly Gly Ala Val Leu Arg Gly Ala Gly Ala Ile Val Leu Arg Lys Glu  
 85 90 95  
 Val Cys Pro Ser Val Arg Leu Xaa Gly Arg Pro Gly Pro Lys Trp Gly  
 100 105 110  
 Arg Lys Arg Gly Thr Ala Arg Val Lys Ile Pro Ala Tyr Ser Gly Trp  
 115 120 125  
 Glu Tyr Val Gln Gly Gly Gly Ala Gln Ala Gly Val Gly Ala Gly Gly  
 130 135 140  
 Pro Ala Ala Ala Ala Pro Thr Arg Gly Pro Pro His Leu Gly Pro Tyr  
 145 150 155 160  
 Leu

<210> 1965  
 <211> 161  
 <212> PRT  
 <213> Homo sapiens

<400> 1965

Met Pro Thr Thr Leu Pro Ser Asp Leu Met Leu Leu Trp Leu Gly Leu  
 1 5 10 15  
 Pro Ser Leu Pro Ser Pro Val Glu Glu Glu Gly Arg Leu Val Lys Gly  
 20 25 30  
 Leu Arg Leu Thr Leu Ala Ala Pro Ala Ser Glu Val Leu Pro Asp Trp  
 35 40 45  
 Glu Asp Pro Pro Ser His Pro Thr Ala Trp Ala Gln Pro Arg Thr His  
 50 55 60  
 Gln Pro Asp Thr Pro Asn Ser Ile Lys Ser Gly Ile Tyr Ser Pro Cys  
 65 70 75 80  
 Gly Gly Ala Val Leu Arg Gly Ala Gly Ala Ile Val Leu Arg Lys Glu  
 85 90 95  
 Val Cys Pro Ser Val Arg Leu Ser Gly Arg Pro Gly Pro Lys Trp Gly  
 100 105 110  
 Arg Lys Arg Gly Thr Ala Arg Val Lys Ile Pro Ala Tyr Ser Gly Trp  
 115 120 125  
 Glu Tyr Val Gln Gly Gly Gly Ala Gln Ala Gly Val Gly Ala Gly Gly  
 130 135 140

Pro Ala Ala Ala Ala Pro Thr Arg Gly Pro Pro His Leu Gly Pro Tyr  
 145 150 155 160

Leu

<210> 1966  
 <211> 92  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (44)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1966  
 Met Gly Pro Phe Ala Pro Thr Leu Leu Met Leu Leu Pro Pro Leu Leu  
 1 5 10 15  
 Met Leu Val Leu Tyr Gly Cys Trp Gln Ala Arg Gly Trp Ala Gly His  
 20 25 30  
 Gln Tyr Glu His His Arg Gly Pro Gly Glu Gln Xaa Ala Ala Tyr Phe  
 35 40 45  
 Gln Ala Met Arg Phe Asn Ala Asn Met Ser Phe His Ala Gln Met Val  
 50 55 60  
 Ile Asn Glu Gly Glu Ala Phe Arg Glu Gly Gln Arg Thr Ile Pro Ala  
 65 70 75 80  
 Val Glu Arg Pro Gly Asn Ala Leu Arg Gln Arg Ser  
 85 90

<210> 1967  
 <211> 92  
 <212> PRT  
 <213> Homo sapiens

<400> 1967  
 Met Gly Pro Phe Ala Pro Thr Leu Leu Met Leu Leu Pro Pro Leu Leu  
 1 5 10 15  
 Met Leu Val Leu Tyr Gly Cys Trp Gln Ala Arg Gly Trp Ala Gly His  
 20 25 30  
 Gln Tyr Glu His His Arg Gly Pro Gly Glu Gln Ser Ala Ala Tyr Phe  
 35 40 45  
 Gln Ala Met Arg Phe Asn Ala Asn Met Ser Phe His Ala Gln Met Val  
 50 55 60  
 Ile Asn Glu Gly Glu Ala Phe Arg Glu Gly Gln Arg Thr Ile Pro Ala  
 65 70 75 80

Val Glu Arg Pro Gly Asn Ala Leu Arg Gln Arg Ser  
                     85                    90

<210> 1968

<211> 124

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (20)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1968

Met Trp Pro Arg Leu Ala Phe Cys Cys Trp Gly Leu Ala Leu Val Ser  
   1                    5                    10                    15

Gly Trp Ala Xaa Phe Gln Gln Met Ser Pro Ser Arg Asn Phe Ser Phe  
                     20                    25                    30

Arg Leu Phe Pro Glu Thr Ala Pro Gly Ala Pro Gly Ser Ile Pro Ala  
                     35                    40                    45

Pro Pro Ala Pro Gly Asp Glu Ala Ala Gly Ser Arg Val Glu Arg Leu  
                     50                    55                    60

Gly Gln Ala Phe Arg Arg Arg Val Arg Leu Leu Arg Glu Leu Asn Glu  
   65                    70                    75                    80

Arg Leu Glu Leu Ala Ser Trp Trp Met Ile Arg Pro Ala Trp Ala Lys  
                     85                    90                    95

Ser Thr Ser Ala Ala Ser Ser Cys Ser Ser Ala Ser Cys Cys Pro Thr  
                     100                    105                    110

Phe Pro Trp Trp Pro Arg Ala Pro Arg Gly His Ser  
                     115                    120

<210> 1969

<211> 230

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (20)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (79)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (165)



<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1969

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Met Trp Pro Arg Leu Ala Phe Cys Cys Trp Gly Leu Ala Leu Val Ser
 1           5           10           15

Gly Trp Ala Xaa Phe Gln Gln Met Ser Pro Ser Arg Asn Phe Ser Phe
          20           25           30

Arg Leu Phe Pro Glu Thr Ala Pro Gly Ala Pro Gly Ser Ile Pro Ala
          35           40           45

Pro Pro Ala Pro Gly Asp Glu Ala Ala Gly Ser Arg Val Glu Arg Leu
 50           55           60

Gly Gln Ala Phe Arg Arg Arg Val Arg Leu Leu Arg Glu Leu Xaa Glu
 65           70           75           80

Arg Leu Glu Leu Val Phe Leu Val Asp Asp Ser Ser Ser Val Gly Glu
          85           90           95

Val Asn Phe Arg Ser Glu Leu Met Phe Val Arg Lys Leu Leu Ser Asp
          100          105          110

Phe Pro Val Val Pro Thr Ala Thr Arg Val Ala Ile Val Thr Phe Ser
          115          120          125

Ser Lys Asn Tyr Val Val Pro Arg Val Asp Tyr Ile Ser Thr Arg Arg
          130          135          140

Ala Arg Gln His Lys Cys Ala Leu Leu Leu Gln Glu Ile Pro Ala Ile
          145          150          155          160

Ser Tyr Arg Gly Xaa Gly Thr Tyr Thr Lys Gly Ala Phe Gln Gln Ala
          165          170          175

Ala Gln Ile Leu Leu His Ala Arg Glu Asn Ser Thr Lys Val Val Phe
          180          185          190

Leu Ile Thr Asp Gly Tyr Ser Lys Gly Glu Thr Leu Ala Gln Leu Gln
          195          200          205

Arg His Cys Glu Ile Gln Glu Trp Arg Ser Ser Leu Leu Ala Tyr Gly
          210          215          220

Lys Gly Thr Phe Glu Ser
          225          230

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<210> 1970

<211> 89

<212> PRT

<213> Homo sapiens

<400> 1970

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Met Trp Pro Arg Leu Ala Phe Cys Cys Trp Gly Leu Ala Leu Val Ser
 1           5           10           15

Gly Trp Ala Thr Phe Gln Gln Met Ser Pro Ser Arg Asn Phe Ser Phe

```

	20		25		30
Arg Leu Phe Pro Glu Thr Ala Pro Gly Ala Pro Gly Ser Ile Pro Ala					
35		40		45	
Pro Pro Ala Pro Gly Asp Glu Ala Ala Gly Ser Arg Val Glu Arg Leu					
50		55		60	
Gly Gln Ala Phe Arg Arg Arg Val Arg Leu Leu Arg Glu Leu Ser Arg					
65		70		75	80
Ala Pro Gly Ala Cys Leu Pro Gly Gly					
	85				

&lt;210&gt; 1971

&lt;211&gt; 99

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (6)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (60)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1971

Met His Val Lys Trp Xaa Leu Ile Met Phe Leu Ile Cys Ile Ser Leu
1 5 10 15

Glu Ser Asn Val Asn Gly Tyr Leu Phe Met Cys Leu Leu Phe Gly Tyr
20 25 30

Leu Leu Trp Arg Asn Val Tyr Pro Asn Leu Leu Pro Ile Leu Asn Phe
35 40 45

Asn Ser Cys Leu Leu Asp Leu Glu Leu Gln Glu Xaa Phe Val Tyr Ser
50 55 60

Lys Tyr Gln Thr Phe Asn Lys Tyr Met Ile Cys Lys Cys Phe Phe Ser
65 70 75 80

His Ala Val Cys Tyr Ser Phe Thr Phe Leu Ile Val Phe Phe Glu Ala
85 90 95

Gln Thr Phe

&lt;210&gt; 1972

&lt;211&gt; 99

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1972

Met His Val Lys Trp Tyr Leu Ile Met Phe Leu Ile Cys Ile Ser Leu  
 1 5 10 15

Glu Ser Asn Val Asn Gly Tyr Leu Phe Met Cys Leu Leu Phe Gly Tyr  
 20 25 30

Leu Leu Trp Arg Asn Val Tyr Pro Asn Leu Leu Pro Ile Leu Asn Phe  
 35 40 45

Asn Ser Cys Leu Leu Asp Leu Glu Leu Gln Glu Phe Phe Val Tyr Ser  
 50 55 60

Lys Tyr Gln Thr Phe Asn Lys Tyr Met Ile Cys Lys Cys Phe Phe Ser  
 65 70 75 80

His Ala Val Cys Tyr Ser Phe Thr Phe Leu Ile Val Phe Phe Glu Ala  
 85 90 95

Gln Thr Phe

&lt;210&gt; 1973

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1973

Met His Thr His Thr Leu Ser Leu Val Ser Leu Ser Leu Ser His Ser  
 1 5 10 15

Phe Leu Leu Ser Ser Gln Val Thr Cys Thr Leu Gly Phe Leu Val Glu  
 20 25 30

Ala His Leu Pro Pro Leu Arg Gly Val Pro Asp Cys Ile His His Asn  
 35 40 45

Pro Lys Thr Arg Val Gly Gly Asn Trp Arg Glu Gln Asn Thr Asp Leu  
 50 55 60

Ile Leu Val Ser Leu Leu Glu Thr Ser Ser Pro Lys Ala Arg Ser Leu  
 65 70 75 80

Lys Thr Asn Leu Leu Lys Thr Cys Leu Leu Lys Val Asn Asp Leu Met  
 85 90 95

Thr Asn Leu Pro Lys Ala Gln Phe Leu Phe Trp Cys Val Tyr Ile His  
 100 105 110

Leu Gly Val Leu Phe Phe Phe Val Met Leu Trp Ile Phe Gln Gly Phe  
 115 120 125

Ile Ser Ile His Pro Arg Val Leu Leu Ser Tyr Tyr Gln Gln His Lys  
 130 135 140

Phe Ile Lys Phe Ala Ala Leu Cys Lys  
 145 150

&lt;210&gt; 1974

&lt;211&gt; 153

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1974

Met His Thr His Thr Leu Ser Leu Val Ser Leu Ser Leu Ser His Ser  
 1 5 10 15

Phe Leu Leu Ser Ser Gln Val Thr Cys Thr Leu Gly Phe Leu Val Glu  
 20 25 30

Ala His Leu Pro Pro Leu Arg Gly Val Pro Asp Cys Ile His His Asn  
 35 40 45

Pro Lys Thr Arg Val Gly Gly Asn Trp Arg Glu Gln Asn Thr Asp Leu  
 50 55 60

Ile Leu Val Ser Leu Leu Glu Thr Ser Ser Pro Lys Ala Arg Ser Leu  
 65 70 75 80

Lys Thr Asn Leu Leu Lys Thr Cys Leu Leu Lys Val Asn Asp Leu Met  
 85 90 95

Thr Asn Leu Pro Lys Ala Gln Phe Leu Phe Trp Cys Val Tyr Ile His  
 100 105 110

Leu Gly Val Leu Phe Phe Phe Val Met Leu Trp Ile Phe Gln Gly Phe  
 115 120 125

Ile Ser Ile His Pro Arg Val Leu Leu Ser Tyr Tyr Gln Gln His Lys  
 130 135 140

Phe Ile Lys Phe Ala Ala Leu Cys Lys  
 145 150

&lt;210&gt; 1975

&lt;211&gt; 129

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (99)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (106)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (121)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids.

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (123)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (127)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1975

Met	Gln	Ala	Gly	Lys	Gly	Leu	Ala	Gln	Val	Trp	Gly	Val	Ala	Thr	Phe
1				5					10					15	

Val	Gln	Leu	Cys	Ala	His	Thr	Val	Phe	Leu	Ser	Met	Tyr	Leu	Cys	Met
			20					25					30		

His	Ile	Cys	Phe	Ala	Ala	Ile	Ser	Ser	Lys	Val	Arg	Val	Arg	Val	Asn
		35					40					45			

Ala	Pro	Phe	Cys	Val	Ser	Val	Pro	Leu	Lys	Val	His	Ala	Pro	Leu	Ser
	50					55					60				

Leu	Gly	Ile	Lys	Val	Gly	Leu	Gln	Gly	Gln	Lys	His	Gly	Arg	Ala	Thr
65					70					75					80

Gly	Glu	Ala	Gly	Met	Pro	Gln	Gly	Glu	Met	Leu	Gly	Lys	Gln	Glu	Pro
				85					90					95	

Gln	Thr	Xaa	Ser	Ser	Pro	Lys	Pro	Thr	Xaa	Arg	Arg	Glu	Val	Ser	Arg
			100					105					110		

Asn	Glu	Leu	Asn	Pro	Val	Ile	Pro	Xaa	Ala	Xaa	Asn	Pro	Phe	Xaa	Lys
		115					120					125			

Lys

&lt;210&gt; 1976

&lt;211&gt; 467

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (151)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (160)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1976

Leu	Gly	Pro	Ala	Gly	Leu	Arg	Arg	Arg	Thr	Lys	Arg	Arg	Lys	Arg	Gly
1				5					10					15	

Asp	Asn	Ser	Thr	Asp	Thr	Thr	Gln	Gly	Asp	Pro	Leu	Ser	Ile	His	His
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

20					25					30					
Tyr	Phe	His	Gly	Tyr	Leu	Ala	Gly	Phe	Ser	Val	Arg	Ser	Gly	Arg	Leu
		35					40					45			
Glu	Ser	Arg	Glu	Val	Ile	Glu	Cys	Leu	Tyr	Ala	Cys	Arg	Glu	Gly	Leu
		50					55					60			
Asp	Tyr	Arg	Asp	Phe	Glu	Ser	Leu	Gly	Lys	Gly	Met	Lys	Val	His	Val
		65					70					75			80
Asn	Pro	Ser	Gln	Ser	Leu	Leu	Thr	Leu	Glu	Gly	Asp	Asp	Val	Glu	Thr
				85					90					95	
Phe	Asn	His	Ala	Leu	Gln	His	Val	Ala	Tyr	Met	Asn	Thr	Leu	Arg	Phe
			100						105					110	
Ala	Thr	Pro	Gly	Val	Arg	Pro	Leu	Arg	Leu	Thr	Thr	Ala	Val	Lys	Cys
			115						120					125	
Phe	Ser	Glu	Glu	Ser	Cys	Val	Ser	Ile	Pro	Glu	Val	Glu	Gly	Tyr	Val
			130						135					140	
Val	Val	Leu	Gln	Pro	Asp	Xaa	Pro	Gln	Ile	Leu	Leu	Ser	Gly	Thr	Xaa
															160
His	Phe	Ala	Arg	Pro	Ala	Val	Asp	Phe	Glu	Gly	Thr	Asn	Gly	Val	Pro
				165					170					175	
Leu	Phe	Pro	Asp	Leu	Gln	Ile	Thr	Cys	Ser	Ile	Ser	His	Gln	Val	Glu
			180						185					190	
Ala	Lys	Lys	Asp	Glu	Ser	Trp	Gln	Gly	Thr	Val	Thr	Asp	Thr	Arg	Met
			195						200					205	
Ser	Asp	Glu	Ile	Val	His	Asn	Leu	Asp	Gly	Cys	Glu	Ile	Ser	Leu	Val
			210						215					220	
Gly	Asp	Asp	Leu	Asp	Pro	Glu	Arg	Glu	Ser	Leu	Leu	Leu	Asp	Thr	Thr
														240	
Ser	Leu	Gln	Gln	Arg	Gly	Leu	Glu	Leu	Thr	Asn	Thr	Ser	Ala	Tyr	Leu
				245					250					255	
Thr	Ile	Ala	Gly	Val	Glu	Ser	Ile	Thr	Val	Tyr	Glu	Glu	Ile	Leu	Arg
				260					265					270	
Gln	Ala	Arg	Tyr	Arg	Leu	Arg	His	Gly	Ala	Ala	Leu	Tyr	Thr	Arg	Lys
				275					280					285	
Phe	Arg	Leu	Ser	Cys	Ser	Glu	Met	Asn	Gly	Arg	Tyr	Ser	Ser	Asn	Glu
				290					295					300	
Phe	Ile	Val	Glu	Val	Asn	Val	Leu	His	Ser	Met	Asn	Arg	Val	Ala	His
				310										320	
Pro	Ser	His	Val	Leu	Ser	Ser	Gln	Gln	Phe	Leu	His	Arg	Gly	His	Gln
				325					330					335	
Pro	Pro	Pro	Glu	Met	Ala	Gly	His	Ser	Leu	Ala	Ser	Ser	His	Arg	Asn

340                                      345                                      350  
 Ser Met Ile Pro Ser Ala Ala Thr Leu Ile Ile Val Val Cys Val Gly  
       355                                      360                                      365  
 Phe Leu Val Leu Met Val Val Leu Gly Leu Val Arg Ile His Ser Leu  
       370                                      375                                      380  
 His Arg Arg Val Ser Gly Ala Gly Gly Pro Pro Gly Ala Ser Ser Asp  
 385                                      390                                      395                                      400  
 Pro Lys Asp Pro Asp Leu Phe Trp Asp Asp Ser Ala Leu Thr Ile Ile  
                                     405                                      410                                      415  
 Val Asn Pro Met Glu Ser Tyr Gln Asn Arg Gln Ser Cys Val Thr Gly  
                                     420                                      425                                      430  
 Ala Val Gly Gly Gln Gln Glu Asp Glu Asp Ser Ser Asp Ser Glu Val  
                                     435                                      440                                      445  
 Ala Asp Ser Pro Ser Ser Asp Glu Arg Arg Ile Ile Glu Thr Pro Pro  
                                     450                                      455                                      460  
 His Arg Tyr  
 465

<210> 1977  
 <211> 231  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (92)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (113)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (116)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1977  
 Met Gln Ala Gly Lys Gly Leu Ala Gln Val Trp Gly Val Ala Thr Phe  
       1                                      5                                      10                                      15  
 Val Gln Leu Cys Ala His Thr Val Phe Leu Ser Met Tyr Leu Cys Met  
                                     20                                      25                                      30  
 His Ile Cys Phe Ala Ala Ile Ser Ser Lys Val Arg Val Arg Val Asn  
                                     35                                      40                                      45  
 Ala Pro Phe Cys Val Ser Val Pro Leu Lys Val His Ala Pro Leu Ser  
                                     50                                      55                                      60

Leu Gly Ile Lys Val Gly Leu Gln Gly Gln Lys His Gly Arg Ala Thr  
 65 70 75 80  
 Gly Glu Ala Gly Met Pro Gln Gly Glu Met Leu Xaa Lys Gln Glu Pro  
 85 90 95  
 Gln Thr Ser Ser Ser Pro Lys Pro Thr Arg Arg Arg Glu Val Ser Arg  
 100 105 110  
 Xaa Glu Leu Xaa Pro Val Ile Pro Ser Ala Ala Thr Leu Ile Ile Val  
 115 120 125  
 Val Cys Val Gly Phe Leu Val Leu Met Val Val Leu Gly Leu Val Arg  
 130 135 140  
 Ile His Ser Leu His Arg Arg Val Ser Gly Ala Gly Gly Pro Pro Gly  
 145 150 155 160  
 Ala Ser Ser Asp Pro Lys Asp Pro Asp Leu Phe Trp Asp Asp Ser Ala  
 165 170 175  
 Leu Thr Ile Ile Val Asn Pro Met Glu Ser Tyr Gln Asn Arg Gln Ser  
 180 185 190  
 Cys Val Thr Gly Ala Val Gly Gly Gln Gln Glu Asp Glu Asp Ser Ser  
 195 200 205  
 Asp Ser Glu Val Ala Asp Ser Pro Ser Ser Asp Glu Arg Arg Ile Ile  
 210 215 220  
 Glu Thr Pro Pro His Arg Tyr  
 225 230

&lt;210&gt; 1978

&lt;211&gt; 145

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1978

Pro Phe Thr Phe Gln His Asp Cys Glu Ala Ser Pro Ala Thr Trp Asn  
 1 5 10 15  
 Tyr Leu Arg Arg Met Thr Ala Gly Phe Met Gly Met Ala Val Ala Ile  
 20 25 30  
 Ile Leu Phe Gly Trp Ile Ile Gly Val Leu Gly Cys Cys Trp Asp Arg  
 35 40 45  
 Gly Leu Met Gln Tyr Val Ala Gly Leu Leu Phe Leu Met Gly Gly Thr  
 50 55 60  
 Phe Cys Ile Ile Ser Leu Cys Thr Cys Val Ala Gly Ile Asn Phe Glu  
 65 70 75 80  
 Leu Ser Arg Tyr Pro Arg Tyr Leu Tyr Gly Leu Pro Asp Asp Ile Ser  
 85 90 95



His Gly Tyr Gly Trp Ser Met Phe Cys Ala Trp Gly Gly Leu Gly Leu  
                   100                  105                  110

Thr Leu Ile Ser Gly Phe Phe Cys Thr Leu Ala Pro Ser Val Gln Pro  
                   115                  120                  125

Val Pro Arg Thr Asn Tyr Pro Lys Ser Arg Pro Glu Asn Gly Thr Val  
                   130                  135                  140

Cys  
 145

<210> 1979  
 <211> 125  
 <212> PRT  
 <213> Homo sapiens

<400> 1979  
 Met Thr Ala Gly Phe Met Gly Met Ala Val Ala Ile Ile Leu Phe Gly  
   1                  5                  10                  15

Trp Ile Ile Gly Val Leu Gly Cys Cys Trp Asp Arg Gly Leu Met Gln  
                   20                  25                  30

Tyr Val Ala Gly Leu Leu Phe Leu Met Gly Gly Thr Phe Cys Ile Ile  
                   35                  40                  45

Ser Leu Cys Thr Cys Val Ala Gly Ile Asn Phe Glu Leu Ser Arg Tyr  
                   50                  55                  60

Pro Arg Tyr Leu Tyr Gly Leu Pro Asp Asp Ile Ser His Gly Tyr Gly  
                   65                  70                  75                  80

Trp Ser Met Phe Cys Ala Trp Gly Gly Leu Gly Leu Thr Leu Ile Ser  
                   85                  90                  95

Gly Phe Phe Cys Thr Leu Ala Pro Ser Val Gln Pro Val Pro Arg Thr  
                   100                  105                  110

Asn Tyr Pro Lys Ser Arg Pro Glu Asn Gly Thr Val Cys  
                   115                  120                  125

<210> 1980  
 <211> 146  
 <212> PRT  
 <213> Homo sapiens

<400> 1980  
 Val Pro Phe Thr Phe Gln His Asp Cys Glu Ala Ser Pro Ala Thr Trp  
   1                  5                  10                  15

Asn Tyr Leu Arg Arg Met Thr Ala Gly Phe Met Gly Met Ala Val Ala  
                   20                  25                  30

Ile Ile Leu Phe Gly Trp Ile Ile Gly Val Leu Gly Cys Cys Trp Asp  
                   35                  40                  45

Arg Gly Leu Met Gln Tyr Val Ala Gly Leu Leu Phe Leu Met Gly Gly  
     50                    55                    60  
 Thr Phe Cys Ile Ile Ser Leu Cys Thr Cys Val Ala Gly Ile Asn Phe  
     65                    70                    75                    80  
 Glu Leu Ser Arg Tyr Pro Arg Tyr Leu Tyr Gly Leu Pro Asp Asp Ile  
                     85                    90                    95  
 Ser His Gly Tyr Gly Trp Ser Met Phe Cys Ala Trp Gly Gly Leu Gly  
                     100                    105                    110  
 Leu Thr Leu Ile Ser Gly Phe Phe Cys Thr Leu Ala Pro Ser Val Gln  
                     115                    120                    125  
 Pro Val Pro Arg Thr Asn Tyr Pro Lys Ser Arg Pro Glu Asn Gly Thr  
                     130                    135                    140  
 Val Cys  
 145

<210> 1981  
 <211> 109  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (40)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1981  
 Met Cys Ser Met Phe Cys Glu Arg Leu Leu Leu Leu Cys His Cys Gln  
     1                    5                    10                    15  
 Leu Ser Ile Ala Val Phe Met Tyr Trp Val His Val Thr His Leu Ser  
                     20                    25                    30  
 Ser Val Arg Arg Ile Asn Tyr Xaa Phe Leu Ile Tyr Lys Lys Gly Met  
                     35                    40                    45  
 Gln Leu Pro Ser Trp Tyr Pro Ser Ser Cys Pro Ala Ser Arg Lys Asn  
                     50                    55                    60  
 Gln Val Thr Gly Met Asn Gly Arg Val Val Asn Val Glu Asp Phe Ile  
     65                    70                    75                    80  
 Glu Gln Trp Lys Trp Leu Ser Val Gly Trp Gly Ala Arg Lys Gly Leu  
                     85                    90                    95  
 Glu Trp Glu Asp Asp Leu Tyr Leu Glu Phe Gly His Pro  
                     100                    105

<210> 1982  
 <211> 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1982

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Met Cys Ser Met Phe Cys Glu Arg Leu Leu Leu Leu Cys His Cys Gln
 1              5              10              15
Leu Ser Ile Ala Val Phe Met Tyr Trp Val His Val Thr His Leu Ser
          20              25              30
Ser Val Arg Arg Ile Asn Tyr Val Phe Leu Ile Tyr Lys Lys Gly Met
          35              40              45
Gln Leu Pro Ser Trp Tyr Pro Ser Ser Cys Pro Ala Ser Arg Lys Asn
 50              55              60
Gln Val Thr Gly Met Asn Gly Arg Val Val Asn Val Glu Asp Phe Ile
 65              70              75              80
Glu Gln Trp Lys Trp Leu Ser Val Gly Trp Gly Ala Arg Lys Gly Leu
          85              90              95
Glu Trp Glu Asp Asp Leu Tyr Leu Glu Phe Gly His Pro
          100              105

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&lt;210&gt; 1983

&lt;211&gt; 109

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (40)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1983

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Met Cys Ser Met Phe Cys Glu Arg Leu Leu Leu Leu Cys His Cys Gln
 1              5              10              15
Leu Ser Ile Ala Val Phe Met Tyr Trp Val His Val Thr His Leu Ser
          20              25              30
Ser Val Arg Arg Ile Asn Tyr Xaa Phe Leu Ile Tyr Lys Lys Gly Met
          35              40              45
Gln Leu Pro Ser Trp Tyr Pro Ser Ser Cys Pro Ala Ser Arg Lys Asn
 50              55              60
Gln Val Thr Gly Met Asn Gly Arg Val Val Asn Val Glu Asp Phe Ile
 65              70              75              80
Glu Gln Trp Lys Trp Leu Ser Val Gly Trp Gly Ala Arg Lys Gly Leu
          85              90              95
Glu Trp Glu Asp Asp Leu Tyr Leu Glu Phe Gly His Pro
          100              105

```

<210> 1984  
 <211> 108  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (29)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (37)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (99)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1984  
 Gly Ala Cys Arg Gly Ser Ser Glu Pro Gly Ala Thr Pro Arg Pro Asp  
     1                    5                    10                    15  
 Gly Glu Pro Arg Pro Leu Pro Gly Leu His Cys Ala Xaa Gly Met Pro  
             20                    25                    30  
 Thr Pro Leu Pro Xaa Ser Pro Leu Gly Leu Arg Ser Leu Arg Arg Val  
             35                    40                    45  
 Gly Trp Pro Val Arg Lys Gly Arg Val Gly Arg Ala Trp Gly Trp Ala  
     50                    55                    60  
 Gly Leu Cys Glu Glu Leu Gln Pro Gln Ala Pro Pro Cys His Glu Ser  
     65                    70                    75                    80  
 Lys Arg Gly Arg Gly Ala Val Ala His Asp Cys Asn Pro Ser Thr Leu  
             85                    90                    95  
 Gly Gly Xaa Ser Gly Gln Ile Thr Arg Ser Gly Val  
             100                    105

<210> 1985  
 <211> 130  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (37)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1985  
 Met Lys Lys Phe Ser Tyr Ala Phe Leu Tyr Phe Pro Ser Leu Asn Phe  
     1                    5                    10                    15  
 Thr Val Ser Thr Trp Leu Cys Thr Ala Leu Phe Leu Leu His Ser His

	20		25		30										
His	Leu	Leu	Ala	Xaa	Cys	Gly	Ser	Thr	Phe	Ala	Gln	Val	Cys	Leu	Val
	35						40					45			
Ser	Glu	Ser	Met	Ser	Pro	Phe	Leu	Gly	Arg	Leu	Cys	Arg	Thr	Ser	Val
	50					55					60				
Pro	Cys	Ala	Gly	Ala	Thr	Ala	Phe	Pro	Ala	Asp	Ser	Asp	Arg	His	Cys
	65				70				75					80	
Asn	Gly	Phe	Pro	Ala	Gly	Ala	Glu	Val	Thr	Asn	Arg	Pro	Ser	Pro	Trp
				85					90					95	
Arg	Pro	Leu	Val	Leu	Leu	Ile	Pro	Leu	Arg	Leu	Gly	Leu	Thr	Asp	Ile
			100					105					110		
Asn	Glu	Ala	Tyr	Val	Glu	Thr	Leu	Lys	Val	Gly	Pro	Ala	Val	Arg	Arg
	115						120					125			
Leu	Pro														
	130														

&lt;210&gt; 1986

&lt;211&gt; 16

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1986

Pro	Ala	Ser	Gln	Lys	Ala	Val	Ser	Ala	Trp	Arg	Cys	Pro	Ala	His	Val
1				5					10					15	

&lt;210&gt; 1987

&lt;211&gt; 130

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1987

Met	Lys	Lys	Phe	Ser	Tyr	Ala	Phe	Leu	Tyr	Phe	Pro	Ser	Leu	Asn	Phe
1				5				10					15		
Thr	Val	Ser	Thr	Trp	Leu	Cys	Thr	Ala	Leu	Phe	Leu	Leu	His	Ser	His
			20					25					30		
His	Leu	Leu	Ala	Cys	Cys	Gly	Ser	Thr	Phe	Ala	Gln	Val	Cys	Leu	Val
	35						40					45			
Ser	Glu	Ser	Met	Ser	Pro	Phe	Leu	Gly	Arg	Leu	Cys	Arg	Thr	Ser	Val
	50					55					60				
Pro	Cys	Ala	Gly	Ala	Thr	Ala	Phe	Pro	Ala	Asp	Ser	Asp	Arg	His	Cys
	65				70					75				80	

Asn Gly Phe Pro Ala Gly Ala Glu Val Thr Asn Arg Pro Ser Pro Trp  
                             85                            90                            95

Arg Pro Leu Val Leu Leu Ile Pro Leu Arg Leu Gly Leu Thr Asp Ile  
                             100                            105                            110

Asn Glu Ala Tyr Val Glu Thr Leu Lys Val Gly Pro Ala Val Arg Arg  
                             115                            120                            125

Leu Pro  
       130

<210> 1988  
 <211> 202  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (176)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (181)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (195)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (200)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1988  
 Met Ala Leu Ser Gly Gly Leu Arg Cys Cys Arg Arg Val Leu Ser Trp  
       1                            5                            10                            15

Val Pro Val Leu Val Ile Val Leu Val Val Leu Trp Ser Tyr Tyr Ala  
                             20                            25                            30

Tyr Val Phe Glu Leu Cys Leu Val Thr Val Leu Ser Pro Ala Glu Lys  
                             35                            40                            45

Val Ile Tyr Leu Ile Leu Tyr His Ala Ile Phe Val Phe Phe Thr Trp  
                             50                            55                            60

Thr Tyr Trp Lys Ser Ile Phe Thr Leu Pro Gln Gln Pro Asn Gln Lys  
       65                            70                            75                            80

Phe His Leu Ser Tyr Thr Asp Lys Glu Arg Tyr Glu Asn Glu Glu Arg  
                             85                            90                            95

Pro Glu Val Gln Lys Gln Met Leu Val Asp Met Ala Lys Lys Leu Pro  
                             100                            105                            110

Val Tyr Thr Arg Thr Gly Ser Gly Ala Val Arg Phe Cys Asp Arg Cys  
 115 120 125

His Leu Ile Lys Pro Asp Arg Cys His His Cys Ser Val Cys Ala Met  
 130 135 140

Cys Val Leu Lys Met Asp His His Cys Pro Trp Val Asn Asn Cys Ile  
 145 150 155 160

Gly Phe Ser Asn Tyr Lys Phe Phe Leu Gln Phe Leu Ala Tyr Ser Xaa  
 165 170 175

Leu Tyr Cys Leu Xaa Ile Ala Thr Thr Val Phe Ser Tyr Phe Ile Lys  
 180 185 190

Tyr Trp Xaa Gly Glu Leu Pro Xaa Val Ala  
 195 200

<210> 1989  
 <211> 96  
 <212> PRT  
 <213> Homo sapiens

<400> 1989  
 Lys Pro Asn Gly Lys Asn Ile Ser Phe His Ser Ser Tyr Gln Val Lys  
 1 5 10 15

Gly Asn Ser Glu Asn Phe Leu Arg Val Phe Asn Ser Pro Thr Lys Ile  
 20 25 30

Ile Asn His Ile Tyr Arg Ala Phe Leu Val Leu Lys Gly Ile Lys Leu  
 35 40 45

His Leu Leu Leu Val Cys Val Cys Ile Cys Glu His Val Gln His Ile  
 50 55 60

Tyr Thr Lys Phe Cys Tyr Ser Val Lys Ile Arg Ala Lys Asn Leu Lys  
 65 70 75 80

Pro Leu Phe Asn Tyr Ala Phe Pro Leu Asn Ser Asn Leu Asn Ile Cys  
 85 90 95

<210> 1990  
 <211> 331  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (176)  
 <223> Xaa equals any of the naturally occurring L-amino acids.

&lt;400&gt; 1990

Met Ala Leu Ser Gly Gly Leu Arg Cys Cys Arg Arg Val Leu Ser Trp  
 1 5 10 15  
 Val Pro Val Leu Val Ile Val Leu Val Val Leu Trp Ser Tyr Tyr Ala  
 20 25 30  
 Tyr Val Phe Glu Leu Cys Leu Val Thr Val Leu Ser Pro Ala Glu Lys  
 35 40 45  
 Val Ile Tyr Leu Ile Leu Tyr His Ala Ile Phe Val Phe Phe Thr Trp  
 50 55 60  
 Thr Tyr Trp Lys Ser Ile Phe Thr Leu Pro Gln Gln Pro Asn Gln Lys  
 65 70 75 80  
 Phe His Leu Ser Tyr Thr Asp Lys Glu Arg Tyr Glu Asn Glu Glu Arg  
 85 90 95  
 Pro Glu Val Gln Lys Gln Met Leu Val Asp Met Ala Lys Lys Leu Pro  
 100 105 110  
 Val Tyr Thr Arg Thr Gly Ser Gly Ala Val Arg Phe Cys Asp Arg Cys  
 115 120 125  
 His Leu Ile Lys Pro Asp Arg Cys His His Cys Ser Val Cys Ala Met  
 130 135 140  
 Cys Val Leu Lys Met Asp His His Cys Pro Trp Val Asn Asn Cys Ile  
 145 150 155 160  
 Gly Phe Ser Asn Tyr Lys Phe Phe Leu Gln Phe Leu Ala Tyr Ser Xaa  
 165 170 175  
 Leu Tyr Cys Leu Tyr Ile Ala Thr Thr Val Phe Ser Tyr Phe Ile Lys  
 180 185 190  
 Tyr Trp Arg Gly Glu Leu Pro Ser Val Arg Ser Lys Phe His Val Leu  
 195 200 205  
 Phe Leu Leu Phe Val Ala Cys Met Phe Phe Val Ser Leu Val Ile Leu  
 210 215 220  
 Phe Gly Tyr His Cys Trp Leu Val Ser Arg Asn Lys Thr Thr Leu Glu  
 225 230 235 240  
 Ala Phe Cys Thr Pro Val Phe Thr Ser Gly Pro Glu Lys Asn Gly Phe  
 245 250 255  
 Asn Leu Gly Phe Ile Lys Asn Ile Gln Gln Val Phe Gly Asp Lys Lys  
 260 265 270  
 Lys Phe Trp Leu Ile Pro Ile Gly Ser Ser Pro Gly Asp Gly His Ser  
 275 280 285  
 Phe Pro Met Arg Ser Met Asn Glu Ser Gln Asn Pro Leu Leu Ala Asn  
 290 295 300  
 Glu Glu Thr Trp Glu Asp Asn Glu Asp Asp Asn Gln Asp Tyr Pro Glu  
 305 310 315 320



Gly Ser Ser Ser Leu Ala Val Glu Thr Glu Thr  
                   325                                  330

<210> 1991

<211> 235

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (171)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (205)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (210)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (221)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1991

Met Trp Gly Leu Leu Leu Ala Leu Ala Ala Phe Ala Pro Ala Val Gly  
       1                              5                              10                              15

Pro Ala Leu Gly Ala Pro Arg Asn Ser Val Leu Gly Leu Ala Gln Pro  
                   20                              25                              30

Gly Thr Thr Lys Val Pro Gly Ser Thr Pro Ala Leu His Ser Ser Pro  
                   35                              40                              45

Ala Gln Pro Pro Ala Glu Thr Ala Asn Gly Thr Ser Glu Gln His Val  
       50                              55                              60

Arg Ile Arg Val Ile Lys Lys Lys Lys Val Ile Met Lys Lys Arg Lys  
       65                              70                              75                              80

Lys Leu Thr Leu Thr Arg Pro Thr Pro Leu Val Thr Ala Gly Pro Leu  
                               85                              90                              95

Val Thr Pro Thr Pro Ala Gly Thr Leu Asp Pro Ala Glu Lys Gln Glu  
                   100                              105                              110

Thr Gly Cys Pro Pro Leu Gly Leu Glu Ser Leu Arg Val Ser Asp Ser  
                   115                              120                              125

Arg Leu Glu Ala Ser Ser Ser Gln Ser Phe Gly Leu Gly Pro His Arg  
       130                              135                              140

Gly Arg Leu Asn Ile Gln Ser Gly Leu Glu Asp Gly Asp Leu Tyr Asp

1291

145		150		155		160									
Gly	Ala	Trp	Cys	Ala	Glu	Glu	Gln	Asp	Ala	Xaa	Pro	Trp	Phe	Gln	Val
				165					170					175	
Asp	Ala	Gly	His	Pro	Thr	Arg	Phe	Leu	Gly	Gly	Ile	Thr	Gln	Gly	Lys
			180					185					190		
Glu	Leu	Leu	Ser	Gly	Gly	Glu	Gly	Arg	Leu	Thr	Leu	Xaa	Gln	Glu	Val
		195					200					205			
Gln	Xaa	Gly	Leu	Gly	Leu	Gly	Ser	Pro	Gly	Gly	Thr	Xaa	Asp	Leu	Ser
	210					215					220				
Ser	Pro	Phe	Leu	Ala	Gly	Met	Met	Gly	Ser	His					
225					230					235					

&lt;210&gt; 1992

&lt;211&gt; 197

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (169)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (187)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (194)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 1992

Met	Trp	Gly	Leu	Leu	Leu	Ala	Leu	Ala	Ala	Phe	Ala	Pro	Ala	Val	Gly
1				5					10					15	

Pro	Ala	Leu	Gly	Ala	Pro	Arg	Asn	Ser	Val	Leu	Gly	Leu	Ala	Gln	Pro
		20					25						30		

Gly	Thr	Thr	Lys	Val	Pro	Gly	Ser	Thr	Pro	Ala	Leu	His	Ser	Ser	Pro
	35					40					45				

Ala	Gln	Pro	Pro	Ala	Glu	Thr	Ala	Asn	Gly	Thr	Ser	Glu	Gln	His	Val
	50				55					60					

Arg	Ile	Arg	Val	Ile	Lys	Lys	Lys	Lys	Val	Ile	Met	Lys	Lys	Arg	Lys
65					70				75					80	

Lys	Leu	Thr	Leu	Thr	Arg	Pro	Thr	Pro	Leu	Val	Thr	Ala	Gly	Pro	Leu
			85					90						95	

Val	Thr	Pro	Thr	Pro	Ala	Gly	Thr	Leu	Asp	Pro	Ala	Glu	Lys	Gln	Glu
			100					105					110		

Thr Gly Cys Pro Pro Leu Gly Leu Glu Ser Leu Arg Val Ser Asp Ser  
 115 120 125  
 Arg Leu Glu Ala Ser Ser Ser Gln Ser Phe Gly Leu Gly Pro His Arg  
 130 135 140  
 Gly Arg Leu Asn Ile Gln Ser Gly Leu Glu Asp Gly Asp Leu Tyr Asp  
 145 150 155 160  
 Gly Ala Trp Cys Ala Glu Glu Gln Xaa Ala Asp Pro Trp Phe Gln Val  
 165 170 175  
 Asp Ala Gly His Pro Thr Arg Phe Ser Gly Xaa Ile Thr Gln Gly Arg  
 180 185 190  
 Asn Xaa Val Trp Arg  
 195

<210> 1993  
 <211> 197  
 <212> PRT  
 <213> Homo sapiens

<400> 1993

Met Trp Gly Leu Leu Leu Ala Leu Ala Ala Phe Ala Pro Ala Val Gly  
 1 5 10 15  
 Pro Ala Leu Gly Ala Pro Arg Asn Ser Val Leu Gly Leu Ala Gln Pro  
 20 25 30  
 Gly Thr Thr Lys Val Pro Gly Ser Thr Pro Ala Leu His Ser Ser Pro  
 35 40 45  
 Ala Gln Pro Pro Ala Glu Thr Ala Asn Gly Thr Ser Glu Gln His Val  
 50 55 60  
 Arg Ile Arg Val Ile Lys Lys Lys Lys Val Ile Met Lys Lys Arg Lys  
 65 70 75 80  
 Lys Leu Thr Leu Thr Arg Pro Thr Pro Leu Val Thr Ala Gly Pro Leu  
 85 90 95  
 Val Thr Pro Thr Pro Ala Gly Thr Leu Asp Pro Ala Glu Lys Gln Glu  
 100 105 110  
 Thr Gly Cys Pro Pro Leu Gly Leu Glu Ser Leu Arg Val Ser Asp Ser  
 115 120 125  
 Arg Leu Glu Ala Ser Ser Ser Gln Ser Phe Gly Leu Gly Pro His Arg  
 130 135 140  
 Gly Arg Leu Asn Ile Gln Ser Gly Leu Glu Asp Gly Asp Leu Tyr Asp  
 145 150 155 160  
 Gly Ala Trp Cys Ala Glu Glu Gln Asp Ala Asp Pro Trp Phe Gln Val  
 165 170 175

Asp Ala Gly His Pro Thr Arg Phe Ser Gly Val Ile Thr Gln Gly Arg  
 180 185 190

Asn Ser Val Trp Arg  
 195

<210> 1994

<211> 241

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (229)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (230)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (236)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 1994

Met Ala Leu Arg Leu Leu Arg Arg Ala Ala Arg Gly Ala Ala Ala Ala  
 1 5 10 15

Ala Leu Leu Arg Leu Lys Ala Ser Leu Ala Ala Asp Ile Pro Arg Leu  
 20 25 30

Gly Tyr Ser Ser Ser Ser His His Lys Tyr Ile Pro Arg Arg Ala Val  
 35 40 45

Leu Tyr Val Pro Gly Asn Asp Glu Lys Lys Ile Lys Lys Ile Pro Ser  
 50 55 60

Leu Asn Val Asp Cys Ala Val Leu Asp Cys Glu Asp Gly Val Ala Ala  
 65 70 75 80

Asn Lys Lys Asn Glu Ala Arg Leu Arg Ile Val Lys Thr Leu Glu Asp  
 85 90 95

Ile Asp Leu Gly Pro Thr Glu Lys Cys Val Arg Val Asn Ser Val Ser  
 100 105 110

Ser Gly Leu Ala Glu Glu Asp Leu Glu Thr Leu Leu Gln Ser Arg Val  
 115 120 125

Leu Pro Ser Ser Leu Met Leu Pro Lys Val Glu Ser Pro Glu Glu Ile  
 130 135 140

Gln Trp Phe Ala Asp Lys Phe Ser Phe His Leu Lys Gly Arg Lys Leu  
 145 150 155 160

Glu Gln Pro Met Asn Leu Ile Pro Phe Val Glu Thr Ala Met Gly Leu

165 170 175  
 Leu Asn Phe Lys Ala Val Cys Glu Glu Thr Leu Lys Val Gly Pro Gln  
 180 185 190  
 Val Gly Leu Phe Leu Asp Ala Val Val Phe Gly Gly Glu Asp Phe Arg  
 195 200 205  
 Ala Ser Ile Gly Ala Thr Ser Ser Lys Glu Thr Leu Gly Tyr Ser Leu  
 210 215 220  
 Arg Pro Ala Lys Xaa Xaa Cys His Ser Glu Thr Xaa Trp Val Ser Lys  
 225 230 235 240  
 Pro

&lt;210&gt; 1995

&lt;211&gt; 340

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1995

Met Ala Leu Arg Leu Leu Arg Arg Ala Ala Arg Gly Ala Ala Ala Ala  
 1 5 10 15  
 Ala Leu Leu Arg Leu Lys Ala Ser Leu Ala Ala Asp Ile Pro Arg Leu  
 20 25 30  
 Gly Tyr Ser Ser Ser Ser His His Lys Tyr Ile Pro Arg Arg Ala Val  
 35 40 45  
 Leu Tyr Val Pro Gly Asn Asp Glu Lys Lys Ile Lys Lys Ile Pro Ser  
 50 55 60  
 Leu Asn Val Asp Cys Ala Val Leu Asp Cys Glu Asp Gly Val Ala Ala  
 65 70 75 80  
 Asn Lys Lys Asn Glu Ala Arg Leu Arg Ile Val Lys Thr Leu Glu Asp  
 85 90 95  
 Ile Asp Leu Gly Pro Thr Glu Lys Cys Val Arg Val Asn Ser Val Ser  
 100 105 110  
 Ser Gly Leu Ala Glu Glu Asp Leu Glu Thr Leu Leu Gln Ser Arg Val  
 115 120 125  
 Leu Pro Ser Ser Leu Met Leu Pro Lys Val Glu Ser Pro Glu Glu Ile  
 130 135 140  
 Gln Trp Phe Ala Asp Lys Phe Ser Phe His Leu Lys Gly Arg Lys Leu  
 145 150 155 160  
 Glu Gln Pro Met Asn Leu Ile Pro Phe Val Glu Thr Ala Met Gly Leu  
 165 170 175  
 Leu Asn Phe Lys Ala Val Cys Glu Glu Thr Leu Lys Val Gly Pro Gln  
 180 185 190

Val Gly Leu Phe Leu Asp Ala Val Val Phe Gly Gly Glu Asp Phe Arg  
 195 200 205  
 Ala Ser Ile Gly Ala Thr Ser Ser Lys Glu Thr Leu Asp Ile Leu Tyr  
 210 215 220  
 Ala Arg Gln Lys Ile Val Val Ile Ala Lys Ala Phe Gly Leu Gln Ala  
 225 230 235 240  
 Val Asp Leu Val Tyr Ile Asp Phe Arg Asp Gly Ala Gly Leu Leu Arg  
 245 250 255  
 Gln Ser Arg Glu Gly Ala Ala Met Gly Phe Thr Gly Lys Gln Val Ile  
 260 265 270  
 His Pro Asn Gln Ile Ala Val Val Gln Glu Gln Phe Ser Pro Ser Pro  
 275 280 285  
 Glu Lys Ile Lys Trp Ala Glu Glu Leu Ile Ala Ala Phe Lys Glu His  
 290 295 300  
 Gln Gln Leu Gly Lys Gly Ala Phe Thr Phe Gln Gly Ser Met Ile Asp  
 305 310 315 320  
 Met Pro Leu Leu Lys Gln Ala Gln Asn Thr Val Thr Leu Ala Thr Ser  
 325 330 335  
 Ile Lys Glu Lys  
 340

&lt;210&gt; 1996

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 1996

Met Ser Pro Pro Pro Pro Leu Leu Leu Leu Leu Leu Ser Leu Ala  
 1 5 10 15  
 Leu Leu Gly Ala Arg Ala Arg Ala Glu Pro Ala Gly Ser Ala Val Pro  
 20 25 30  
 Ala Gln Ser Arg Pro Cys Val Asp Cys His Ala Phe Glu Phe Met Gln  
 35 40 45  
 Arg Ala Leu Gln Asp Leu Arg Lys Thr Ala Cys Ser Leu Asp Ala Arg  
 50 55 60  
 Thr Glu Thr Leu Leu Leu Gln Ala Glu Arg Arg Ala Leu Cys Ala Cys  
 65 70 75 80  
 Trp Pro Ala Gly His  
 85

&lt;210&gt; 1997

<211> 95  
 <212> PRT  
 <213> Homo sapiens

<400> 1997

```

Met Ala Pro Pro Pro Ala Cys Arg Ser Pro Met Ser Pro Pro Pro Pro
 1              5              10              15

Leu Leu Leu Leu Leu Leu Leu Ser Leu Ala Leu Leu Gly Ala Arg Ala
      20              25              30

Arg Ala Glu Pro Ala Gly Ser Ala Val Pro Ala Gln Ser Arg Pro Cys
      35              40              45

Val Asp Cys His Ala Phe Glu Phe Met Gln Arg Ala Leu Gln Asp Leu
      50              55              60

Arg Lys Thr Ala Cys Ser Leu Asp Ala Arg Thr Glu Thr Leu Leu Leu
      65              70              75              80

Gln Ala Glu Arg Arg Ala Leu Cys Ala Cys Trp Pro Ala Gly His
      85              90              95
  
```

<210> 1998  
 <211> 84  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (76)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (78)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (79)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (80)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (84)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 1998

```

Met Leu Cys Met Gln Thr Val Met Pro Gln His Thr Tyr Leu Gln His
 1              5              10              15

Leu Val Phe Gly Phe Cys Leu Leu Ile Leu Cys Ile Asn Leu Ser Val
  
```

				20					25					30				
Leu	Ala	His	Arg	Tyr	Thr	Leu	Cys	Tyr	Phe	Ser	Met	Thr	Gly	Glu	Tyr			
			35				40				45							
Ser	Ile	Ile	Asn	Gly	Gln	Leu	Leu	Val	Tyr	Leu	Ser	Asn	Leu	Ser	Ala			
		50			55			60										
Gln	Trp	Lys	Tyr	Arg	Tyr	Phe	Gln	Thr	Leu	Leu	Xaa	Leu	Xaa	Xaa	Xaa			
		65			70			75								80		
Gly	Val	Val	Xaa															

<210> 1999

<211> 105

<212> PRT

<213> Homo sapiens

<400> 1999

Met Leu Cys Met Gln Thr Val Met Pro Gln His Thr Tyr Leu Gln His  
1 5 10 15

Leu Val Phe Gly Phe Cys Leu Leu Ile Leu Cys Ile Asn Leu Ser Val  
20 25 30

Leu Ala His Arg Tyr Thr Leu Cys Tyr Phe Ser Met Thr Gly Glu Tyr  
35 40 45

Ser Ile Ile Asn Gly Gln Leu Leu Val Tyr Leu Ser Asn Leu Ser Ala  
50 55 60

Gln Trp Lys Tyr Arg Tyr Phe Gln Thr Leu Leu Val Leu Lys Lys Lys  
65 70 75 80

Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys

85                      90                      95

Lys Lys Lys Lys Lys Lys Lys Lys Lys  
100 105

<210> 2000

<211> 108

<212> PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

 $\langle 222 \rangle$  (7.6)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

&lt;221&gt; SITE

<222> (106)

<223> Xaa equals any of the naturally occurring L-amino acids.



&lt;400&gt; 2000

```

Met Leu Cys Met Gln Thr Val Met Pro Gln His Thr Tyr Leu Gln His
 1              5              10              15

Leu Val Phe Gly Phe Cys Leu Leu Ile Leu Cys Ile Asn Leu Ser Val
      20              25              30

Leu Ala His Arg Tyr Thr Leu Cys Tyr Phe Ser Met Thr Gly Glu Tyr
      35              40              45

Ser Ile Ile Asn Gly Gln Leu Leu Val Tyr Leu Ser Asn Leu Ser Ala
      50              55              60

Gln Trp Lys Tyr Arg Tyr Phe Gln Thr Leu Leu Xaa Leu Lys Lys Lys
      65              70              75              80

Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys
      85              90              95

Lys Lys Lys Lys Lys Lys Lys Lys Lys Xaa Lys Lys
      100              105

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&lt;210&gt; 2001

&lt;211&gt; 75

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (62)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2001

```

Met Pro Leu Ala Pro Ser Pro Val Met Leu Ile Leu Val Ile Leu Leu
 1              5              10              15

Leu Phe Cys Pro Ser Phe Gln Phe Leu Pro Ile Ser Phe Tyr Ser Phe
      20              25              30

Asn Val Tyr Ala Phe Ala Phe Ser Gly Ile Ser Pro Pro Ser Cys Leu
      35              40              45

His Gly Trp Leu His Phe Ile Gln Ser Ser Phe Phe Leu Xaa Tyr Ser
      50              55              60

Asp Asn Ile Leu Val Ser Pro Ser Leu Tyr Leu
      65              70              75

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&lt;210&gt; 2002

&lt;211&gt; 75

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2002

```

Met Pro Leu Ala Pro Ser Pro Val Met Leu Ile Leu Val Ile Leu Leu
 1              5              10              15

```

Leu Phe Cys Pro Ser Phe Gln Phe Leu Pro Ile Ser Phe Tyr Ser Phe  
                   20                                  25                                  30

Asn Val Tyr Ala Phe Ala Phe Ser Gly Ile Ser Pro Pro Ser Cys Leu  
                   35                                  40                                  45

His Gly Trp Leu His Phe Ile Gln Ser Ser Phe Phe Leu Leu Tyr Ser  
           50                                  55                                  60

Asp Asn Ile Leu Phe Ser Pro Ser Leu Tyr Leu  
       65                                  70                                  75

&lt;210&gt; 2003

&lt;211&gt; 147

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (119)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2003

Met Trp Leu Trp Val Trp Leu Ile His Thr Leu His Ser Gly Leu Gln  
       1                                  5                                  10                                  15

Lys Pro Arg Glu Arg Ser Leu Pro Glu Ala Thr Phe Gln Asn Leu Leu  
                   20                                  25                                  30

His Pro Pro Thr Asp Leu Pro Ser Pro Cys Pro Leu Phe Glu Ser Arg  
                   35                                  40                                  45

Cys Gln Val Leu Pro Ala Asp Thr Trp Leu Leu Glu Gly Arg Cys Ser  
       50                                  55                                  60

Phe His Leu Thr Met Gln Ala Cys Phe Ala Val Gly Arg Ala Val Leu  
       65                                  70                                  75                                  80

Ser Ser Ser Gln Leu His Thr Gly Ile Thr Trp Arg Val Gln Lys Leu  
                   85                                  90                                  95

Pro Ala Ser Val Lys Glu His Gln Cys Ile Ser Thr Ala Asn Ile Pro  
                   100                                  105                                  110

Asn Ala Arg Leu Asp Ser Xaa Gln Leu Pro Gly Pro Pro Gly Phe Ser  
                   115                                  120                                  125

Ser Phe Gln Glu Leu Ser Asp Pro Gly Ser Ser Leu Asn Val Gly Tyr  
       130                                  135                                  140

Lys Leu Thr  
       145

&lt;210&gt; 2004

&lt;211&gt; 147

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2004

```

Met Trp Leu Trp Val Trp Leu Ile His Thr Leu His Ser Gly Leu Gln
 1              5              10              15

Lys Pro Arg Glu Arg Ser Leu Pro Glu Ala Thr Phe Gln Asn Leu Leu
      20              25              30

His Pro Pro Thr Asp Leu Pro Ser Pro Cys Pro Leu Phe Glu Ser Arg
      35              40              45

Cys Gln Val Leu Pro Ala Asp Thr Trp Leu Leu Glu Gly Arg Cys Ser
      50              55              60

Phe His Leu Thr Met Gln Ala Cys Phe Ala Val Gly Arg Ala Val Leu
      65              70              75              80

Ser Ser Ser Gln Leu His Thr Gly Ile Thr Trp Arg Val Gln Lys Leu
      85              90              95

Pro Ala Ser Val Lys Glu His Gln Cys Ile Ser Thr Ala Asn Ile Pro
      100             105             110

Asn Ala Arg Leu Asp Ser Leu Gln Leu Pro Gly Pro Pro Gly Phe Ser
      115             120             125

Ser Phe Gln Glu Leu Ser Asp Pro Gly Ser Ser Leu Asn Val Gly Tyr
      130             135             140

Lys Leu Thr
145

```

&lt;210&gt; 2005

&lt;211&gt; 147

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2005

```

Met Trp Leu Trp Val Trp Leu Ile His Thr Leu His Ser Gly Leu Gln
 1              5              10              15

Lys Pro Arg Glu Arg Ser Leu Pro Glu Ala Thr Phe Gln Asn Leu Leu
      20              25              30

His Pro Pro Thr Asp Leu Pro Ser Pro Cys Pro Leu Phe Glu Ser Arg
      35              40              45

Cys Gln Val Leu Pro Ala Asp Thr Trp Leu Leu Glu Gly Arg Cys Ser
      50              55              60

Phe His Leu Thr Met Gln Ala Cys Phe Ala Val Gly Arg Ala Val Leu
      65              70              75              80

Ser Ser Ser Gln Leu His Thr Gly Ile Thr Trp Arg Val Gln Lys Leu
      85              90              95

```

Pro Ala Ser Val Lys Glu His Gln Cys Ile Ser Thr Ala Asn Ile Pro  
                   100                  105                  110

Asn Ala Arg Leu Asp Ser Leu Gln Leu Pro Gly Pro Pro Gly Phe Ser  
                   115                  120                  125

Ser Phe Gln Glu Leu Ser Asp Pro Gly Ser Ser Leu Asn Val Gly Tyr  
                   130                  135                  140

Lys Leu Thr  
 145

<210> 2006  
 <211> 127  
 <212> PRT  
 <213> Homo sapiens

<400> 2006  
 Gln Gly Tyr Phe Arg Met Asp Ser Ser Ala Thr Gln Phe His Ile Glu  
   1                  5                  10                  15

Thr His Glu Asn Thr Ser Gly Leu Trp Ser Ile Trp Tyr Arg Asn His  
                   20                  25                  30

Phe Asp Arg Ser Val Val Leu Asn Asp Val Phe Leu Ser Lys Glu Thr  
                   35                  40                  45

Lys His Met Leu Lys Ile Leu Asn Phe Thr Gly Pro Leu Phe Leu Pro  
                   50                  55                  60

Pro Gly Cys Trp Asn Ile Phe Ser Leu Lys Leu Ala Val Lys Asp Ile  
                   65                  70                  75                  80

Ala Ile Asn Leu Phe Thr Asn Val Phe Leu Thr Thr Asn Ile Gly Ala  
                   85                  90                  95

Ile Phe Ala Ile Pro Leu Gln Ile Ser His Cys Leu Glu Thr Arg Val  
                   100                  105                  110

Thr Val Gly Met Cys Glu Asn Asn Trp Ile Phe Lys Gln Cys Glu  
                   115                  120                  125

<210> 2007  
 <211> 221  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (25)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
 <220>  
 <221> SITE  
 <222> (26)  
 <223> Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (34)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2007

Lys Gly Thr Pro Ala Gly Thr Gly Pro Glu Phe Pro Gly Arg Pro Thr  
 1 5 10 15  
 Arg Pro Gly Asp Leu Trp Pro Thr Xaa Xaa Val Cys Val Thr Ser Ser  
 20 25 30  
 Leu Xaa Cys Thr Leu Glu Asn Gly Val Pro Cys Val Ile Gln Glu Ser  
 35 40 45  
 Ala Pro Val His Asn Ser Phe Ile Asp Trp Ser Ala Thr Cys Glu Gly  
 50 55 60  
 Gln Phe Ser Ser Ala Tyr Cys Pro Leu Glu Leu Asn Asp Tyr Asn Ala  
 65 70 75 80  
 Phe Pro Glu Glu Asn Met Asn Tyr Ala Asn Gly Phe Pro Cys Pro Ala  
 85 90 95  
 Asp Val Gln Thr Asp Phe Ile Asp His Asn Ser Gln Ser Thr Trp Asn  
 100 105 110  
 Thr Pro Pro Asn Met Pro Ala Ala Trp Gly His Ala Ser Phe Ile Ser  
 115 120 125  
 Ser Pro Pro Tyr Leu Thr Ser Thr Arg Ser Leu Ser Pro Met Ser Gly  
 130 135 140  
 Leu Phe Gly Ser Ile Trp Ala Pro Gln Ser Asp Val Tyr Glu Asn Cys  
 145 150 155 160  
 Cys Pro Ile Asn Pro Thr Thr Glu His Ser Thr His Met Glu Asn Gln  
 165 170 175  
 Ala Val Val Cys Lys Glu Tyr Tyr Pro Gly Phe Asn Pro Phe Arg Ala  
 180 185 190  
 Tyr Met Asn Leu Asp Ile Trp Thr Thr Thr Ala Asn Arg Asn Ala Asn  
 195 200 205  
 Phe Pro Leu Ser Arg Asp Ser Ser Tyr Cys Gly Asn Val  
 210 215 220

&lt;210&gt; 2008

&lt;211&gt; 166

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2008

Met Ala Gly Leu Arg Arg Pro Gln Pro Gly Cys Tyr Cys Arg Thr Ala  
 1 5 10 15

Ala Ala Val Asn Leu Leu Leu Gly Val Phe Gln Val Leu Leu Pro Cys  
                   20                                  25                                  30

Cys Arg Pro Gly Gly Ala Gln Gly Gln Ala Ile Glu Pro Leu Pro Asn  
                   35                                  40                                  45

Val Val Glu Leu Trp Gln Ala Glu Glu Gly Glu Leu Leu Leu Pro Thr  
                   50                                  55                                  60

Gln Gly Asp Ser Glu Glu Gly Leu Glu Glu Pro Ser Gln Glu Gln Ser  
                   65                                  70                                  75                                  80

Phe Ser Asp Lys Leu Phe Ser Gly Lys Gly Leu His Phe Gln Pro Ser  
                   85                                  90                                  95

Val Leu Asp Phe Gly Ile Gln Phe Leu Gly His Pro Val Ala Lys Ile  
                   100                                  105                                  110

Leu His Ala Tyr Asn Pro Ser Arg Asp Ser Glu Val Val Val Asn Ser  
                   115                                  120                                  125

Val Phe Ala Ala Ala Gly His Phe His Val Pro Pro Val Pro Cys Arg  
                   130                                  135                                  140

Val Ile Pro Ala Met Gly Lys Thr Ser Ser Glu Leu Phe Ser Tyr Leu  
                   145                                  150                                  155                                  160

Thr Glu Glu Gly Ser Ile  
                                   165

&lt;210&gt; 2009

&lt;211&gt; 19

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2009

Ile Pro Cys Thr Arg Pro Leu Gly Phe Pro Cys Gly Ser Asn Val Pro  
           1                                  5                                  10                                  15

Trp Trp Gly

&lt;210&gt; 2010

&lt;211&gt; 511

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (171)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (358)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (388)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2010

Met	Ala	Gly	Leu	Arg	Arg	Pro	Gln	Pro	Gly	Cys	Tyr	Cys	Arg	Thr	Ala
1				5					10					15	
Ala	Ala	Val	Asn	Leu	Leu	Leu	Gly	Val	Phe	Gln	Val	Leu	Leu	Pro	Cys
			20					25						30	
Cys	Arg	Pro	Gly	Gly	Ala	Gln	Gly	Gln	Ala	Ile	Glu	Pro	Leu	Pro	Asn
		35					40					45			
Val	Val	Glu	Leu	Trp	Gln	Ala	Glu	Glu	Gly	Glu	Leu	Leu	Leu	Pro	Thr
	50					55					60				
Gln	Gly	Asp	Ser	Glu	Glu	Gly	Leu	Glu	Glu	Pro	Ser	Gln	Glu	Gln	Ser
65						70				75					80
Phe	Ser	Asp	Lys	Leu	Phe	Ser	Gly	Lys	Gly	Leu	His	Phe	Gln	Pro	Ser
				85					90					95	
Val	Leu	Asp	Phe	Gly	Ile	Gln	Phe	Leu	Gly	His	Pro	Val	Ala	Lys	Ile
			100					105					110		
Leu	His	Ala	Tyr	Asn	Pro	Ser	Arg	Asp	Ser	Glu	Val	Val	Val	Asn	Ser
		115					120					125			
Val	Phe	Ala	Ala	Ala	Gly	His	Phe	His	Val	Pro	Pro	Val	Pro	Cys	Arg
	130					135					140				
Val	Ile	Pro	Ala	Met	Gly	Lys	Thr	Ser	Phe	Arg	Ile	Ile	Phe	Leu	Pro
145					150					155					160
Thr	Glu	Glu	Gly	Ser	Ile	Glu	Ser	Ser	Leu	Xaa	Ile	Asn	Thr	Ser	Ser
				165					170					175	
Tyr	Gly	Val	Leu	Ser	Tyr	His	Val	Ser	Gly	Ile	Gly	Thr	Arg	Arg	Ile
			180					185					190		
Ser	Thr	Glu	Gly	Ser	Ala	Lys	Gln	Leu	Pro	Asn	Ala	Tyr	Phe	Leu	Leu
		195					200					205			
Pro	Lys	Val	Gln	Ser	Ile	Gln	Leu	Ser	Gln	Met	Gln	Ala	Glu	Thr	Thr
	210					215					220				
Asn	Thr	Ser	Leu	Leu	Gln	Val	Gln	Leu	Glu	Cys	Ser	Leu	His	Asn	Lys
225					230					235					240
Val	Cys	Gln	Gln	Leu	Lys	Gly	Cys	Tyr	Leu	Glu	Ser	Asp	Asp	Val	Leu
				245					250					255	
Arg	Leu	Gln	Met	Ser	Ile	Met	Val	Thr	Met	Glu	Asn	Phe	Ser	Lys	Glu
			260					265					270		
Phe	Glu	Glu	Asn	Thr	Gln	His	Leu	Leu	Asp	His	Leu	Ser	Ile	Val	Tyr
		275					280					285			

Val Ala Thr Asp Glu Ser Glu Thr Ser Asp Asp Ser Ala Val Asn Met  
 290 295 300  
 Tyr Ile Leu His Ser Gly Asn Ser Leu Ile Trp Ile Gln Asp Ile Arg  
 305 310 315 320  
 His Phe Ser Gln Arg Asp Ala Leu Ser Leu Gln Phe Glu Pro Val Leu  
 325 330 335  
 Leu Pro Thr Ser Thr Thr Asn Phe Thr Lys Ile Ala Ser Phe Thr Cys  
 340 345 350  
 Lys Ala Ala Thr Ser Xaa Asp Ser Gly Ile Ile Glu Asp Val Lys Lys  
 355 360 365  
 Thr Thr His Thr Pro Thr Leu Lys Ala Cys Leu Phe Ser Ser Val Ala  
 370 375 380  
 Gln Gly Tyr Xaa Arg Met Asp Ser Ser Ala Thr Gln Phe His Ile Glu  
 385 390 395 400  
 Thr His Glu Asn Thr Ser Gly Leu Trp Ser Ile Trp Tyr Arg Asn His  
 405 410 415  
 Phe Asp Arg Ser Val Val Leu Asn Asp Val Phe Leu Ser Lys Glu Thr  
 420 425 430  
 Lys His Met Leu Lys Ile Leu Asn Phe Thr Gly Pro Leu Phe Leu Pro  
 435 440 445  
 Pro Gly Cys Trp Asn Ile Phe Ser Leu Lys Leu Ala Val Lys Asp Ile  
 450 455 460  
 Ala Ile Asn Leu Phe Thr Asn Val Phe Leu Thr Thr Asn Ile Gly Ala  
 465 470 475 480  
 Ile Phe Ala Ile Pro Leu Gln Ile Ser His Cys Leu Glu Thr Arg Val  
 485 490 495  
 Thr Val Gly Met Cys Glu Asn Asn Trp Ile Phe Lys Gln Cys Glu  
 500 505 510

&lt;210&gt; 2011

&lt;211&gt; 317

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2011

Met Ile Ala Leu Leu Lys Ile Leu Leu Ala Ala Ala Pro Thr Ser Lys  
 1 5 10 15  
 Ala Lys Thr Asp Ser Ile Asn Ile Leu Ala Asp Val Leu Pro Glu Glu  
 20 25 30  
 Met Pro Thr Thr Val Leu Gln Ser Met Lys Leu Gly Val Asp Val Asn  
 35 40 45



Arg His Lys Glu Val Ile Val Lys Ala Ile Ser Ala Val Leu Leu Leu  
 50 55 60  
 Leu Leu Lys His Phe Lys Leu Asn His Val Tyr Gln Phe Glu Tyr Met  
 65 70 75 80  
 Ala Gln His Leu Val Phe Ala Asn Cys Ile Pro Leu Ile Leu Lys Phe  
 85 90 95  
 Phe Asn Gln Asn Ile Met Ser Tyr Ile Thr Ala Lys Asn Ser Ile Ser  
 100 105 110  
 Val Leu Asp Tyr Pro His Cys Val Val His Glu Leu Pro Glu Leu Thr  
 115 120 125  
 Ala Glu Ser Leu Glu Ala Gly Asp Ser Asn Gln Phe Cys Trp Arg Asn  
 130 135 140  
 Leu Phe Ser Cys Ile Asn Leu Leu Arg Ile Leu Asn Lys Leu Thr Lys  
 145 150 155 160  
 Trp Lys His Ser Arg Thr Met Met Leu Val Val Phe Lys Ser Ala Pro  
 165 170 175  
 Ile Leu Lys Arg Ala Leu Lys Val Lys Gln Ala Met Met Gln Leu Tyr  
 180 185 190  
 Val Leu Lys Leu Leu Lys Val Gln Thr Lys Tyr Leu Gly Arg Gln Trp  
 195 200 205  
 Arg Lys Ser Asn Met Lys Thr Met Ser Ala Ile Tyr Gln Lys Val Arg  
 210 215 220  
 His Arg Leu Asn Asp Asp Trp Ala Tyr Gly Asn Asp Leu Asp Ala Arg  
 225 230 235 240  
 Pro Trp Asp Phe Gln Ala Glu Glu Cys Ala Leu Arg Ala Asn Ile Glu  
 245 250 255  
 Arg Phe Asn Ala Arg Arg Tyr Asp Arg Ala His Ser Asn Pro Asp Phe  
 260 265 270  
 Leu Pro Val Asp Asn Cys Leu Gln Ser Val Leu Gly Gln Arg Val Asp  
 275 280 285  
 Leu Pro Glu Asp Phe Gln Met Asn Tyr Asp Leu Trp Leu Glu Arg Glu  
 290 295 300  
 Val Phe Ser Lys Pro Ile Ser Trp Glu Glu Leu Leu Gln  
 305 310 315

&lt;210&gt; 2012

&lt;211&gt; 957

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2012

Met Ala Leu Leu His Trp Gly Ala Leu Trp Arg Gln Leu Ala Ser Pro

1	5	10	15
Cys Gly Ala Trp	Ala Leu Arg Asp	Thr Pro Ile Pro	Arg Trp Lys Leu
	20	25	30
Ser Ser Ala Glu	Thr Tyr Ser Arg	Met Arg Leu Lys	Leu Val Pro Asn
	35	40	45
His His Phe Asp	Pro His Leu Glu	Ala Ser Ala Leu	Arg Asp Asn Leu
	50	55	60
Gly Glu Val Pro	Leu Thr Pro Thr	Glu Glu Ala Ser	Leu Pro Leu Ala
	65	70	75
Val Thr Lys Glu	Ala Lys Val Ser	Thr Pro Pro Glu	Leu Leu Gln Glu
	85	90	95
Asp Gln Leu Gly	Glu Asp Glu Leu	Ala Glu Leu Glu	Thr Pro Met Glu
	100	105	110
Ala Ala Glu Leu	Asp Glu Gln Arg	Glu Lys Leu Val	Leu Ser Ala Glu
	115	120	125
Cys Gln Leu Val	Thr Val Val Ala	Val Val Pro Gly	Leu Leu Glu Val
	130	135	140
Thr Thr Gln Asn	Val Tyr Phe Tyr	Asp Gly Ser Thr	Glu Arg Val Glu
	145	150	155
Thr Glu Glu Gly	Ile Gly Tyr Asp	Phe Arg Arg Pro	Leu Ala Gln Leu
	165	170	175
Arg Glu Val His	Leu Arg Arg Phe	Asn Leu Arg Arg	Ser Ala Leu Glu
	180	185	190
Leu Phe Phe Ile	Asp Gln Ala Asn	Tyr Phe Leu Asn	Phe Pro Cys Lys
	195	200	205
Val Gly Thr Thr	Pro Val Ser Ser	Pro Ser Gln Thr	Pro Arg Pro Gln
	210	215	220
Pro Gly Pro Ile	Pro Pro His Thr	Gln Val Arg Asn	Gln Val Tyr Ser
	225	230	235
Trp Leu Leu Arg	Leu Arg Pro Pro	Ser Gln Gly Tyr	Leu Ser Ser Arg
	245	250	255
Ser Pro Gln Glu	Met Leu Arg Ala	Ser Gly Leu Thr	Gln Lys Trp Val
	260	265	270
Gln Arg Glu Ile	Ser Asn Phe Glu	Tyr Leu Met Gln	Leu Asn Thr Ile
	275	280	285
Ala Gly Arg Thr	Tyr Asn Asp Leu	Ser Gln Tyr Pro	Val Phe Pro Trp
	290	295	300
Val Leu Gln Asp	Tyr Val Ser Pro	Thr Leu Asp Leu	Ser Asn Pro Ala
	305	310	315
Val Phe Arg Asp	Leu Ser Lys Pro	Ile Gly Val Val	Asn Pro Lys His

325										330					335				
Ala	Gln	Leu	Val	Arg	Glu	Lys	Tyr	Glu	Ser	Phe	Glu	Asp	Pro	Ala	Gly				
			340					345					350						
Thr	Ile	Asp	Lys	Phe	His	Tyr	Gly	Thr	His	Tyr	Ser	Asn	Ala	Ala	Gly				
		355					360					365							
Val	Met	His	Tyr	Leu	Ile	Arg	Val	Glu	Pro	Phe	Thr	Ser	Leu	His	Val				
	370					375					380								
Gln	Leu	Gln	Ser	Gly	Arg	Phe	Asp	Cys	Ser	Asp	Arg	Gln	Phe	His	Ser				
385					390					395					400				
Val	Ala	Ala	Ala	Trp	Gln	Ala	Arg	Leu	Glu	Ser	Pro	Ala	Asp	Val	Lys				
				405					410					415					
Glu	Leu	Ile	Pro	Glu	Phe	Phe	Tyr	Phe	Pro	Asp	Phe	Leu	Glu	Asn	Gln				
			420					425					430						
Asn	Gly	Phe	Asp	Leu	Gly	Cys	Leu	Gln	Leu	Thr	Asn	Glu	Lys	Val	Gly				
	435						440					445							
Asp	Val	Val	Leu	Pro	Pro	Trp	Ala	Ser	Ser	Pro	Glu	Asp	Phe	Ile	Gln				
	450					455					460								
Gln	His	Arg	Gln	Ala	Leu	Glu	Ser	Glu	Tyr	Val	Ser	Ala	His	Leu	His				
465					470					475					480				
Glu	Trp	Ile	Asp	Leu	Ile	Phe	Gly	Tyr	Lys	Gln	Arg	Gly	Pro	Ala	Ala				
				485					490					495					
Glu	Glu	Ala	Leu	Asn	Val	Phe	Tyr	Tyr	Cys	Thr	Tyr	Glu	Gly	Ala	Val				
			500					505					510						
Asp	Leu	Asp	His	Val	Thr	Asp	Glu	Arg	Glu	Arg	Lys	Ala	Leu	Glu	Gly				
		515					520					525							
Ile	Ile	Ser	Asn	Phe	Gly	Gln	Thr	Pro	Cys	Gln	Leu	Leu	Lys	Glu	Pro				
	530					535					540								
His	Pro	Thr	Arg	Leu	Ser	Ala	Glu	Glu	Ala	Ala	His	Arg	Leu	Ala	Arg				
545					550					555					560				
Leu	Asp	Thr	Asn	Ser	Pro	Ser	Ile	Phe	Gln	His	Leu	Asp	Glu	Leu	Lys				
				565					570					575					
Ala	Phe	Phe	Ala	Glu	Val	Val	Ser	Asp	Gly	Val	Pro	Leu	Val	Leu	Ala				
			580					585					590						
Leu	Val	Pro	His	Arg	Gln	Pro	His	Ser	Phe	Ile	Thr	Gln	Gly	Ser	Pro				
		595				600						605							
Asp	Leu	Leu	Val	Thr	Val	Ser	Ala	Ser	Gly	Leu	Leu	Gly	Thr	His	Ser				
	610					615					620								
Trp	Leu	Pro	Tyr	Asp	Arg	Asn	Ile	Ser	Asn	Tyr	Phe	Ser	Phe	Ser	Lys				
625					630					635					640				
Asp	Pro	Thr	Met	Gly	Ser	His	Lys	Thr	Gln	Arg	Leu	Leu	Ser	Gly	Pro				

645					650					655					
Trp	Val	Pro	Gly	Ser	Gly	Val	Ser	Gly	Gln	Ala	Leu	Ala	Val	Ala	Pro
			660					665					670		
Asp	Gly	Lys	Leu	Leu	Phe	Ser	Gly	Gly	His	Trp	Asp	Gly	Ser	Leu	Arg
		675					680					685			
Val	Thr	Ala	Leu	Pro	Arg	Gly	Lys	Leu	Leu	Ser	Gln	Leu	Ser	Cys	His
	690					695					700				
Leu	Asp	Val	Val	Thr	Cys	Leu	Ala	Leu	Asp	Thr	Cys	Gly	Ile	Tyr	Leu
705					710					715					720
Ile	Ser	Gly	Ser	Arg	Asp	Thr	Thr	Cys	Met	Val	Trp	Arg	Leu	Leu	His
				725					730					735	
Gln	Gly	Gly	Leu	Ser	Val	Gly	Leu	Ala	Pro	Lys	Pro	Val	Gln	Val	Leu
			740					745					750		
Tyr	Gly	His	Gly	Ala	Ala	Val	Ser	Cys	Val	Ala	Ile	Ser	Thr	Glu	Leu
		755					760					765			
Asp	Met	Ala	Val	Ser	Gly	Ser	Glu	Asp	Gly	Thr	Val	Ile	Ile	His	Thr
	770					775					780				
Val	Arg	Arg	Gly	Gln	Phe	Val	Ala	Ala	Leu	Arg	Pro	Leu	Gly	Ala	Thr
785					790					795					800
Phe	Pro	Gly	Pro	Ile	Phe	His	Leu	Ala	Leu	Gly	Ser	Glu	Gly	Gln	Ile
				805					810					815	
Val	Val	Gln	Ser	Ser	Ala	Trp	Glu	Arg	Pro	Gly	Ala	Gln	Val	Thr	Tyr
			820					825					830		
Ser	Leu	His	Leu	Tyr	Ser	Val	Asn	Gly	Lys	Leu	Arg	Ala	Ser	Leu	Pro
		835					840					845			
Leu	Ala	Glu	Gln	Pro	Thr	Ala	Leu	Thr	Val	Thr	Glu	Asp	Phe	Val	Leu
	850					855					860				
Leu	Gly	Thr	Ala	Gln	Cys	Ala	Leu	His	Ile	Leu	Gln	Leu	Asn	Thr	Leu
865					870					875				880	
Leu	Pro	Ala	Ala	Pro	Pro	Leu	Pro	Met	Lys	Val	Ala	Ile	Arg	Ser	Val
				885					890					895	
Ala	Val	Thr	Lys	Glu	Arg	Ser	His	Val	Leu	Val	Gly	Leu	Glu	Asp	Gly
			900					905					910		
Lys	Leu	Ile	Val	Val	Val	Ala	Gly	Gln	Pro	Ser	Glu	Val	Arg	Ser	Ser
		915					920					925			
Gln	Phe	Ala	Arg	Lys	Leu	Trp	Arg	Ser	Ser	Arg	Arg	Ile	Ser	Gln	Val
	930					935					940				
Ser	Ser	Gly	Glu	Thr	Glu	Tyr	Asn	Pro	Thr	Glu	Ala	Arg			
945					950					955					

<210> 2013  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 2013  
 Met Trp Trp Glu Asp Leu Met Lys Gly Leu Phe Cys Leu Trp Pro Leu  
 1 5 10 15  
 Val Arg Ser Val Ser Ser Leu Met Thr Ser Ser Thr Ser Cys Pro Ser  
 20 25 30  
 Pro Pro Thr Leu Pro Pro Trp Arg Pro Cys Leu Pro Arg Leu Arg Met  
 35 40 45  
 Arg Val Leu Val Leu Leu Ile Trp Ser  
 50 55

<210> 2014  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 2014  
 Met Trp Trp Glu Asp Leu Met Lys Gly Leu Phe Cys Leu Trp Pro Leu  
 1 5 10 15  
 Val Arg Ser Val Ser Ser Leu Met Thr Ser Ser Thr Ser Cys Pro Ser  
 20 25 30  
 Pro Pro Thr Leu Pro Pro Trp Arg Pro Cys Leu Pro Arg Leu Arg Met  
 35 40 45  
 Arg Val Leu Val Leu Leu Ile Trp Ser  
 50 55

<210> 2015  
 <211> 75  
 <212> PRT  
 <213> Homo sapiens

<400> 2015  
 Met Asn Leu His Tyr Leu Leu Ala Val Ile Leu Ile Gly Ala Ala Gly  
 1 5 10 15  
 Val Phe Ala Phe Ile Asp Val Cys Leu Gln Arg Asn His Phe Arg Gly  
 20 25 30  
 Lys Lys Ala Lys Lys His Met Leu Val Pro Pro Pro Gly Lys Glu Lys  
 35 40 45  
 Gly Pro Gln Gln Gly Lys Gly Pro Glu Pro Ala Lys Pro Pro Glu Pro  
 50 55 60  
 Gly Lys Pro Pro Gly Pro Ala Lys Gly Lys Lys

65

70

75

&lt;210&gt; 2016

&lt;211&gt; 42

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2016

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Met Arg Leu Ser Lys Ser Asn Gln Val Gln Leu Phe Leu Tyr Phe Leu
  1              5              10              15
Leu Gln Trp Ser Leu Gly Ser Val Asn Ala Glu Thr Ser Leu Gln Ile
              20              25              30
Leu Leu Ala Cys Ser Phe Thr Thr Asp Ser
              35              40

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&lt;210&gt; 2017

&lt;211&gt; 169

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2017

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Met Trp Ala Val Leu Arg Leu Ala Leu Arg Pro Cys Ala Arg Ala Ser
  1              5              10              15
Pro Ala Gly Pro Arg Ala Tyr His Gly Asp Ser Val Ala Ser Leu Gly
              20              25              30
Thr Gln Pro Asp Leu Gly Ser Ala Leu Tyr Gln Glu Asn Tyr Lys Gln
              35              40              45
Met Lys Ala Leu Val Asn Gln Leu His Glu Arg Val Glu His Ile Lys
              50              55              60
Leu Gly Gly Gly Glu Lys Ala Arg Ala Leu His Ile Ser Arg Gly Lys
              65              70              75              80
Leu Leu Pro Arg Glu Arg Ile Asp Asn Leu Ile Asp Pro Gly Ser Pro
              85              90              95
Phe Leu Glu Leu Ser Gln Phe Ala Gly Tyr Gln Leu Tyr Asp Asn Glu
              100              105              110
Glu Val Pro Gly Gly Gly Ile Ile Thr Gly Ile Gly Arg Val Ser Gly
              115              120              125
Val Glu Cys Met Ile Ile Ala Asn Asp Ala Thr Val Lys Gly Gly Ala
              130              135              140
Tyr Tyr Pro Val Thr Val Lys Lys Gln Leu Arg Ala Gln Glu Ile Ala
              145              150              155              160
Met Gln Thr Gly Ser Pro Ala Ser Thr
              165

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<210> 2018  
 <211> 45  
 <212> PRT  
 <213> Homo sapiens

<400> 2018  
 Met Val Lys His Phe Thr Leu Trp Met Val Cys Leu Ser Leu Val Phe  
           1                  5                  10                  15  
 Arg Lys Leu Leu Ser Leu Leu Pro Lys Lys Lys Glu Gly Gln Val Asn  
                   20                  25                  30  
 Phe Phe Asn Gln Lys Lys Ile Thr His Phe Ile Lys Pro  
           35                  40                  45

<210> 2019  
 <211> 388  
 <212> PRT  
 <213> Homo sapiens

<400> 2019  
 Met Met Thr Ile Thr Phe Leu Pro Tyr Thr Phe Ser Leu Met Val Thr  
           1                  5                  10                  15  
 Phe Pro Asp Val Pro Leu Gly Ile Phe Leu Phe Cys Val Cys Val Ile  
           20                  25                  30  
 Ala Ile Gly Val Val Gln Ala Leu Ile Val Gly Tyr Ala Phe His Phe  
           35                  40                  45  
 Pro His Leu Leu Ser Pro Gln Ile Gln Arg Ser Ala His Arg Ala Leu  
           50                  55                  60  
 Tyr Arg Arg His Val Leu Gly Ile Val Leu Gln Gly Pro Ala Leu Cys  
           65                  70                  75                  80  
 Phe Ala Ala Ala Ile Phe Ser Leu Phe Phe Val Pro Leu Ser Tyr Leu  
                   85                  90                  95  
 Leu Met Val Thr Val Ile Leu Leu Pro Tyr Val Ser Lys Val Thr Gly  
           100                  105                  110  
 Trp Cys Arg Asp Arg Leu Leu Gly His Arg Glu Pro Ser Ala His Pro  
           115                  120                  125  
 Val Glu Val Phe Ser Phe Asp Leu His Glu Pro Leu Ser Lys Glu Arg  
           130                  135                  140  
 Val Glu Ala Phe Ser Asp Gly Val Tyr Ala Ile Val Ala Thr Leu Leu  
           145                  150                  155                  160  
 Ile Leu Asp Ile Cys Glu Asp Asn Val Pro Asp Pro Lys Asp Val Lys  
                   165                  170                  175  
 Glu Arg Phe Ser Gly Ser Leu Val Ala Ala Leu Ser Ala Thr Gly Pro  
           180                  185                  190

Arg Phe Leu Ala Tyr Phe Gly Ser Phe Ala Thr Val Gly Leu Leu Trp  
 195 200 205  
 Phe Ala His His Ser Leu Phe Leu His Val Arg Lys Ala Thr Arg Ala  
 210 215 220  
 Met Gly Leu Leu Asn Thr Leu Ser Leu Ala Phe Val Gly Gly Leu Pro  
 225 230 235 240  
 Leu Ala Tyr Gln Gln Thr Ser Ala Phe Ala Arg Gln Pro Arg Asp Glu  
 245 250 255  
 Leu Glu Arg Val Arg Val Ser Cys Thr Ile Ile Phe Leu Ala Ser Ile  
 260 265 270  
 Phe Gln Leu Ala Met Trp Thr Thr Ala Leu Leu His Gln Ala Glu Thr  
 275 280 285  
 Leu Gln Pro Ser Val Trp Phe Gly Gly Arg Glu His Val Leu Met Phe  
 290 295 300  
 Ala Lys Leu Ala Leu Tyr Pro Cys Ala Ser Leu Leu Ala Phe Ala Ser  
 305 310 315 320  
 Thr Cys Leu Leu Ser Arg Phe Ser Val Gly Ile Phe His Leu Met Gln  
 325 330 335  
 Ile Ala Val Pro Cys Ala Phe Leu Leu Leu Arg Leu Leu Val Gly Leu  
 340 345 350  
 Ala Leu Ala Thr Leu Arg Val Leu Arg Gly Leu Ala Arg Pro Glu His  
 355 360 365  
 Pro Pro Pro Ala Pro Thr Gly Gln Asp Asp Pro Gln Ser Gln Leu Leu  
 370 375 380  
 Pro Ala Pro Cys  
 385

&lt;210&gt; 2020

&lt;211&gt; 554

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2020

Met Gly Pro Arg Phe Thr Met Leu Leu Ala Met Trp Leu Val Cys Gly  
 1 5 10 15  
 Ser Glu Pro His Pro His Ala Thr Ile Arg Gly Ser His Gly Gly Arg  
 20 25 30  
 Lys Val Pro Leu Val Ser Pro Asp Ser Ser Arg Pro Ala Arg Phe Leu  
 35 40 45  
 Arg His Thr Gly Arg Ser Arg Gly Ile Glu Arg Ser Thr Leu Glu Glu  
 50 55 60



Pro Asn Leu Gln Pro Leu Gln Arg Arg Arg Ser Val Pro Val Leu Arg  
 65 70 75 80  
 Leu Ala Arg Pro Thr Glu Pro Pro Ala Arg Ser Asp Ile Asn Gly Ala  
 85 90 95  
 Ala Val Arg Pro Glu Gln Arg Pro Ala Ala Arg Gly Ser Pro Arg Glu  
 100 105 110  
 Met Ile Arg Asp Glu Gly Ser Ser Ala Arg Ser Arg Met Leu Arg Phe  
 115 120 125  
 Pro Ser Gly Ser Ser Ser Pro Asn Ile Leu Ala Ser Phe Ala Gly Lys  
 130 135 140  
 Asn Arg Val Trp Val Ile Ser Ala Pro His Ala Ser Glu Gly Tyr Tyr  
 145 150 155 160  
 Arg Leu Met Met Ser Leu Leu Lys Asp Asp Val Tyr Cys Glu Leu Ala  
 165 170 175  
 Glu Arg His Ile Gln Gln Ile Val Leu Phe His Gln Ala Gly Glu Glu  
 180 185 190  
 Gly Gly Lys Val Arg Arg Ile Thr Ser Glu Gly Gln Ile Leu Glu Gln  
 195 200 205  
 Pro Leu Asp Pro Ser Leu Ile Pro Lys Leu Met Ser Phe Leu Lys Leu  
 210 215 220  
 Glu Lys Gly Lys Phe Gly Met Val Leu Leu Lys Lys Thr Leu Gln Val  
 225 230 235 240  
 Glu Glu Arg Tyr Pro Tyr Pro Val Arg Leu Glu Ala Met Tyr Glu Val  
 245 250 255  
 Ile Asp Gln Gly Pro Ile Arg Arg Ile Glu Lys Ile Arg Gln Lys Gly  
 260 265 270  
 Phe Val Gln Lys Cys Lys Ala Ser Gly Val Glu Gly Gln Val Val Ala  
 275 280 285  
 Glu Gly Asn Asp Gly Gly Gly Gly Ala Gly Arg Pro Ser Gln Gly Ser  
 290 295 300  
 Glu Lys Lys Lys Glu Asp Pro Arg Arg Ala Gln Val Pro Pro Thr Arg  
 305 310 315 320  
 Glu Ser Arg Val Lys Val Leu Arg Lys Leu Ala Ala Thr Ala Pro Ala  
 325 330 335  
 Phe Pro Gln Pro Pro Ser Thr Pro Arg Ala Thr Thr Leu Thr Pro Ala  
 340 345 350  
 Pro Ala Thr Thr Val Thr Arg Ser Thr Ser Arg Ala Gly Asn Arg Cys  
 355 360 365  
 Cys Lys Thr Tyr Asp His His Trp Leu Ser His His Ala Glu Ala Leu  
 370 375 380

Asp Pro Leu Thr Leu Pro Thr Gly Pro Leu Gln Pro Leu Arg Val Ile  
 385 390 395 400  
 Thr Ala Arg Arg Pro Ser Val Ser Arg Glu Ser Leu Pro Ser Ile Pro  
 405 410 415  
 Gly Arg Ile Ser Thr Gly Arg Gly His Arg Gln Pro Gly Gly Pro Ala  
 420 425 430  
 Arg Pro Thr Ser Leu Glu Ser Phe Thr Asn Ala Pro Pro Thr Thr Ile  
 435 440 445  
 Ser Glu Pro Ser Thr Arg Ala Ala Gly Pro Gly Arg Phe Arg Asp Asn  
 450 455 460  
 Arg Met Asp Arg Arg Glu His Gly His Arg Asp Pro Asn Val Val Pro  
 465 470 475 480  
 Gly Pro Pro Lys Pro Ala Lys Glu Lys Pro Pro Lys Lys Lys Ala Gln  
 485 490 495  
 Asp Lys Ile Leu Ser Asn Glu Tyr Glu Glu Lys Tyr Asp Leu Ser Arg  
 500 505 510  
 Pro Thr Ala Ser Gln Leu Glu Asp Glu Leu Gln Val Gly Asn Val Pro  
 515 520 525  
 Leu Lys Lys Ala Lys Glu Ser Lys Lys His Glu Lys Leu Glu Lys Pro  
 530 535 540  
 Glu Lys Glu Lys Lys Lys Lys Lys Lys Lys  
 545 550

&lt;210&gt; 2021

&lt;211&gt; 509

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2021

Met Thr Trp Arg Met Gly Pro Arg Phe Thr Met Leu Leu Ala Met Trp  
 1 5 10 15  
 Leu Val Cys Gly Ser Glu Pro His Pro His Ala Thr Ile Arg Gly Ser  
 20 25 30  
 His Gly Gly Arg Lys Val Pro Leu Val Ser Pro Asp Ser Ser Arg Pro  
 35 40 45  
 Ala Arg Phe Leu Arg His Thr Gly Arg Ser Arg Gly Ile Glu Arg Ser  
 50 55 60  
 Thr Leu Glu Glu Pro Asn Leu Gln Pro Leu Gln Arg Arg Arg Ser Val  
 65 70 75 80  
 Pro Val Leu Arg Leu Ala Arg Pro Thr Glu Pro Pro Ala Arg Ser Asp  
 85 90 95  
 Ile Asn Gly Ala Ala Val Arg Pro Glu Gln Arg Pro Ala Ala Arg Gly

100					105					110					
Ser	Pro	Arg	Glu	Met	Ile	Arg	Asp	Glu	Gly	Ser	Ser	Ala	Arg	Ser	Arg
		115					120					125			
Met	Leu	Arg	Phe	Pro	Ser	Gly	Ser	Ser	Ser	Pro	Asn	Ile	Leu	Ala	Ser
	130					135					140				
Phe	Ala	Gly	Lys	Asn	Arg	Val	Trp	Val	Ile	Ser	Ala	Pro	His	Ala	Ser
145					150					155					160
Glu	Gly	Tyr	Tyr	Arg	Leu	Met	Met	Ser	Leu	Leu	Lys	Asp	Asp	Val	Tyr
				165					170					175	
Cys	Glu	Leu	Ala	Glu	Arg	His	Ile	Gln	Gln	Ile	Val	Leu	Phe	His	Gln
			180					185					190		
Ala	Gly	Glu	Glu	Gly	Gly	Lys	Val	Arg	Arg	Ile	Thr	Ser	Glu	Gly	Gln
		195					200					205			
Ile	Leu	Glu	Gln	Pro	Leu	Asp	Pro	Ser	Leu	Ile	Pro	Lys	Leu	Met	Ser
	210					215					220				
Phe	Leu	Lys	Leu	Glu	Lys	Gly	Lys	Phe	Gly	Met	Val	Leu	Leu	Lys	Lys
225					230					235					240
Thr	Leu	Gln	Val	Glu	Glu	Arg	Tyr	Pro	Tyr	Pro	Val	Arg	Leu	Glu	Ala
				245					250					255	
Met	Tyr	Glu	Val	Ile	Asp	Gln	Gly	Pro	Ile	Arg	Arg	Ile	Glu	Lys	Ile
		260						265					270		
Arg	Gln	Lys	Gly	Phe	Val	Gln	Lys	Cys	Lys	Ala	Ser	Gly	Val	Glu	Gly
		275					280					285			
Gln	Val	Val	Ala	Glu	Gly	Asn	Asp	Gly	Gly	Gly	Gly	Ala	Gly	Arg	Pro
	290					295					300				
Ser	Leu	Gly	Ser	Glu	Lys	Lys	Lys	Glu	Asp	Pro	Arg	Arg	Ala	Gln	Val
305					310					315					320
Pro	Pro	Thr	Arg	Glu	Ser	Arg	Val	Lys	Val	Leu	Arg	Lys	Leu	Ala	Ala
				325					330					335	
Thr	Ala	Pro	Ala	Phe	Pro	Gln	Pro	Pro	Ser	Thr	Pro	Arg	Ala	Thr	Thr
			340					345					350		
Leu	Pro	Pro	Ala	Pro	Ala	Thr	Thr	Val	Thr	Arg	Ser	Thr	Ser	Arg	Ala
		355					360					365			
Val	Thr	Val	Ala	Ala	Arg	Pro	Met	Thr	Thr	Thr	Ala	Phe	Pro	Thr	Thr
	370					375					380				
Gln	Arg	Pro	Trp	Thr	Pro	Ser	Pro	Ser	His	Arg	Pro	Pro	Thr	Thr	Thr
385					390					395					400
Glu	Val	Ile	Thr	Ala	Arg	Arg	Pro	Ser	Val	Ser	Glu	Asn	Leu	Tyr	Pro
				405					410					415	
Pro	Ser	Arg	Lys	Asp	Gln	His	Arg	Glu	Arg	Pro	Gln	Thr	Thr	Arg	Arg

420								425								430			
Pro	Ser	Lys	Ala	Thr	Ser	Leu	Glu	Ser	Phe	Thr	Asn	Ala	Pro	Pro	Thr				
		435					440					445							
Thr	Ile	Ser	Glu	Pro	Ser	Thr	Arg	Ala	Ala	Gly	Pro	Gly	Arg	Phe	Arg				
	450					455					460								
Asp	Asn	Arg	Met	Asp	Arg	Arg	Glu	His	Gly	His	Arg	Asp	Pro	Asn	Val				
465					470					475					480				
Val	Pro	Gly	Pro	Pro	Lys	Pro	Ala	Lys	Glu	Lys	Pro	Pro	Lys	Lys	Lys				
				485					490					495					
Ala	Gln	Asp	Lys	Ile	Leu	Ser	Asn	Glu	Tyr	Glu	Glu	Val							
			500					505											

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<210> .2022
<211> 264
<212> PRT
<213> Homo sapiens
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<400> 2022

Met	Cys	Leu	Leu	Gly	Ala	Leu	Val	Leu	Leu	Gly	Leu	Gly	Val	Leu	Leu
1				5					10					15	
Phe	Ser	Gly	Gly	Leu	Ser	Glu	Ser	Glu	Thr	Gly	Pro	Met	Glu	Glu	Val
			20					25					30		
Glu	Arg	Gln	Val	Leu	Pro	Asp	Pro	Glu	Val	Leu	Glu	Ala	Val	Gly	Asp
		35					40					45			
Arg	Gln	Asp	Gly	Leu	Arg	Glu	Gln	Leu	Gln	Ala	Pro	Val	Pro	Pro	Asp
	50					55					60				
Ser	Val	Pro	Ser	Leu	Gln	Asn	Met	Gly	Leu	Leu	Leu	Asp	Lys	Leu	Ala
65					70					75					80
Lys	Glu	Asn	Gln	Asp	Ile	Arg	Leu	Leu	Gln	Ala	Gln	Leu	Gln	Ala	Gln
				85					90					95	
Lys	Glu	Glu	Leu	Gln	Ser	Leu	Met	His	Gln	Pro	Lys	Gly	Leu	Glu	Glu
			100					105					110		
Glu	Asn	Ala	Gln	Leu	Arg	Gly	Ala	Leu	Gln	Gln	Gly	Glu	Ala	Phe	Gln
		115					120					125			
Arg	Ala	Leu	Glu	Ser	Glu	Leu	Gln	Gln	Leu	Arg	Ala	Arg	Leu	Gln	Gly
	130					135					140				
Leu	Glu	Ala	Asp	Cys	Val	Arg	Gly	Pro	Asp	Gly	Val	Cys	Leu	Ser	Gly
145				150						155					160
Gly	Arg	Gly	Pro	Gln	Gly	Asp	Lys	Ala	Ile	Arg	Glu	Gln	Gly	Pro	Arg
				165					170					175	
Glu	Gln	Glu	Pro	Glu	Leu	Ser	Phe	Leu	Lys	Gln	Lys	Glu	Gln	Leu	Glu
			180					185					190		

Ala Glu Ala Gln Ala Leu Ser Leu Glu Glu Val Ala Val Gln Gln Thr  
 195 200 205

Gly Asp Asp Asp Glu Val Asp Asp Phe Glu Asp Phe Ile Phe Ser His  
 210 215 220

Phe Phe Gly Asp Lys Ala Leu Lys Lys Arg Ser Gly Lys Lys Asp Lys  
 225 230 235 240

His Ser Gln Ser Pro Arg Ala Ala Gly Pro Arg Glu Gly His Ser His  
 245 250 255

Ser His His His His His Arg Gly  
 260

<210> 2023  
 <211> 123  
 <212> PRT  
 <213> Homo sapiens

<400> 2023  
 Met Leu Cys Leu Ser Ser Val Val Met Phe Leu Pro Gln Pro Gly Ala  
 1 5 10 15

Ala Ser Asp Pro Leu Phe Ile Trp Glu Ala Ser Cys His Ser Leu Gly  
 20 25 30

Gln Asn Trp Ala Gln Gly Lys Gly Leu Ser Pro Glu Asp Gly Leu Glu  
 35 40 45

Gly Leu Gly His Thr Arg Ala Trp Thr Phe Gly Ala Gly Glu Pro Gly  
 50 55 60

Leu Arg Leu Leu Asn Val Arg Gly Leu Leu Thr Arg Gly Pro Ser Arg  
 65 70 75 80

Gly Ser Leu Cys Pro Leu Leu Trp Ser Asp Gln Ala Leu His Leu Ser  
 85 90 95

Ala Gly Pro Leu Trp Gln Arg Ser Pro Val Leu Phe Leu Leu Phe Leu  
 100 105 110

Phe Leu Thr Lys Ala Cys Ala Thr Ser Cys Pro  
 115 120

<210> 2024  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 2024  
 Met Asn Cys Val Glu Trp Trp Lys Ser Val Phe Leu Phe Val Val Leu  
 1 5 10 15

Leu Phe Val Thr Ser Val Ser Cys Leu Gly Val Val Gly Val Ala Val

20 25 30

Glu Gly Ser Leu Gln Ser Cys Ser Phe Tyr Ser Leu Cys Asn Lys Arg  
35 40 45

Leu Glu His Val Lys Gly Ile Phe Lys  
50 55

<210> 2025

<211> 57

<212> PRT

<213> Homo sapiens

<400> 2025

Met Asn Cys Val Glu Trp Trp Lys Ser Val Phe Leu Phe Val Val Leu  
1 5 10 15

Leu Phe Val Thr Ser Val Ser Cys Leu Gly Val Val Gly Val Ala Val  
20 25 30

Glu Gly Ser Leu Gln Ser Cys Ser Phe Tyr Ser Leu Cys Asn Lys Arg  
35 40 45

Leu Glu His Val Lys Gly Ile Phe Lys  
50 55

<210> 2026

<211> 92

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (29)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2026

Met Glu Ile Arg Thr Arg Val Val Trp Leu Cys Leu Cys Leu Cys Leu  
1 5 10 15

Cys Leu Cys Leu Cys Leu Ser Leu Phe Ser Leu Pro Xaa Ser Leu Ser  
20 25 30

Pro Leu Pro Ser Pro Leu Ser Leu Ser Val Ser Leu Ser Leu Ser Phe  
35 40 45

His Gly Leu Pro Leu Met Pro Ser Arg Ser Trp Thr Val Leu Leu Pro  
50 55 60

Ser Gln Leu Thr Ala Thr Ser Leu Pro Asp Ser Pro Ala Ser Ala Cys  
65 70 75 80

Arg Val Pro Ala Ile Ala Gly Ala Arg His Ala  
85 90

<210> 2027  
 <211> 82  
 <212> PRT  
 <213> Homo sapiens

<400> 2027  
 Met Asn Arg Ser Thr Arg Ser Tyr Arg Cys Trp Ala Thr Trp Pro Arg  
     1                    5                    10                    15  
 Leu Gly Trp Ala Leu Pro Cys Cys Met Asn Ser Leu Arg Lys Gly Arg  
                     20                    25                    30  
 Lys Phe Ser Gln Ile Thr Thr Ser Leu Met Ala Ser Val Ser Ser Ala  
                     35                    40                    45  
 Ser Met Val Ser Arg Arg Arg Arg Pro Leu Pro Lys His Pro Val Thr  
                     50                    55                    60  
 Thr Thr Ser Thr Ala Thr Ala Leu Leu Gly Thr Ser Ser Thr Trp Ser  
     65                    70                    75                    80  
 Lys Ser

<210> 2028  
 <211> 46  
 <212> PRT  
 <213> Homo sapiens

<400> 2028  
 Met Val Thr Ala Ser Leu Leu Leu Leu Pro Ala Val Met Ala Ile Val  
     1                    5                    10                    15  
 Phe Pro Ile Thr Trp Ala Val Gln Ser Gln Ser Trp Ala Ala Glu Phe  
                     20                    25                    30  
 Asn Gly Ala Cys Phe Gln Val Leu His Gly Lys Leu Tyr Ser  
                     35                    40                    45

<210> 2029  
 <211> 176  
 <212> PRT  
 <213> Homo sapiens

<400> 2029  
 Met Ser Arg Gly Asp Asn Cys Thr Asp Leu Leu Ala Leu Gly Ile Pro  
     1                    5                    10                    15  
 Ser Ile Thr Gln Ala Trp Gly Leu Trp Val Leu Leu Gly Ala Val Thr  
                     20                    25                    30  
 Leu Leu Phe Leu Ile Ser Leu Ala Ala His Leu Ser Gln Trp Thr Arg  
                     35                    40                    45  
 Gly Arg Ser Arg Ser His Pro Gly Gln Gly Arg Ser Gly Glu Ser Val

50                      55                      60  
 Glu Glu Val Pro Leu Tyr Gly Asn Leu His Tyr Leu Gln Thr Gly Arg  
 65                      70                      75                      80  
 Leu Ser Gln Asp Pro Glu Pro Asp Gln Gln Asp Pro Thr Leu Gly Gly  
                     85                      90                      95  
 Pro Ala Arg Ala Ala Glu Glu Val Met Cys Tyr Thr Ser Leu Gln Leu  
                     100                      105                      110  
 Arg Pro Pro Gln Gly Arg Ile Pro Gly Pro Gly Thr Pro Val Lys Tyr  
                     115                      120                      125  
 Ser Glu Val Val Leu Asp Ser Glu Pro Lys Ser Gln Ala Ser Gly Pro  
                     130                      135                      140  
 Glu Pro Glu Leu Tyr Ala Ser Val Cys Ala Gln Thr Arg Arg Ala Arg  
 145                      150                      155                      160  
 Ala Ser Phe Pro Asp Gln Ala Tyr Ala Asn Ser Gln Pro Ala Ala Ser  
                     165                      170                      175

&lt;210&gt; 2030

&lt;211&gt; 168

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (83)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2030

Met Pro Leu Leu Arg Gly Leu Leu Trp Leu Gln Val Leu Cys Ala Gly  
 1                      5                      10                      15  
 Pro Leu His Thr Glu Ala Val Val Leu Leu Val Pro Ser Asp Asp Gly  
                     20                      25                      30  
 Arg Ala Phe Leu Leu Arg Ser Arg Leu Leu His Pro Glu Ala His Val  
                     35                      40                      45  
 Pro Pro Ala Ala Asp Arg Gly Ala Ser Leu Gln Cys Val Leu His Gln  
                     50                      55                      60  
 Ala Ala Pro Lys Ser Arg Pro Arg Ser Pro Ala Ala Gly Ala Ala Leu  
 65                      70                      75                      80  
 Leu His Xaa Pro Arg Arg Thr Gly Asp Glu Pro Cys Arg Glu Phe His  
                     85                      90                      95  
 Gly Asn Gly Phe Pro Gly Pro Thr Gln Leu Thr Pro Gly Glu Cys Gly  
                     100                      105                      110



Leu Pro Ala Pro Ser Ser Leu Leu Gln His Ala Ser Ala Pro Val Arg  
 115 120 125

Thr Gly Ser Glu Gly Gln Val Val Gly Cys Pro Arg Ala Arg Gly Glu  
 130 135 140

Thr Gly Glu Gly Leu Ser Leu Ala Phe Leu Ser Ser Leu Met Phe Thr  
 145 150 155 160

Ser Arg Asn Gly Leu Val Gly Cys  
 165

&lt;210&gt; 2031

&lt;211&gt; 135

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (118)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (121)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2031

Met Pro Leu Leu Arg Gly Leu Leu Trp Leu Gln Val Leu Cys Ala Gly  
 1 5 10 15

Pro Leu His Thr Glu Ala Val Val Leu Leu Val Pro Ser Asp Asp Gly  
 20 25 30

Arg Ala Phe Leu Leu Arg Ser Arg Leu Leu His Pro Glu Ala His Val  
 35 40 45

Pro Pro Ala Ala Asp Arg Gly Ala Ser Leu Gln Cys Val Leu His Gln  
 50 55 60

Ala Ala Pro Lys Ser Arg Pro Arg Ser Pro Ala Ala Gly Ala Ala Leu  
 65 70 75 80

Leu His Arg Pro Arg Arg Thr Gly Asp Glu Pro Cys Arg Glu Phe His  
 85 90 95

Gly Asn Gly Phe Pro Gly Pro Thr Gln Leu Thr Pro Gly Glu Cys Gly  
 100 105 110

Leu Pro Ala Pro Ser Xaa Leu Leu Xaa His Ala Ser Ala Pro Val Arg  
 115 120 125

Thr Val Cys Ala Leu Thr Trp  
 130 135

&lt;210&gt; 2032

<211> 168  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (39)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2032

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Met Pro Leu Leu Arg Gly Leu Leu Trp Leu Gln Val Leu Cys Ala Gly
 1           5           10           15

Pro Leu His Thr Glu Ala Val Val Leu Leu Val Pro Ser Asp Asp Gly
          20           25           30

Arg Ala Phe Leu Leu Arg Xaa Arg Leu Leu His Pro Glu Ala His Val
          35           40           45

Pro Pro Ala Ala Asp Arg Gly Ala Ser Leu Gln Cys Val Leu His Gln
          50           55           60

Ala Ala Pro Lys Ser Arg Pro Arg Ser Pro Ala Ala Gly Ala Ala Leu
          65           70           75           80

Leu His Arg Pro Arg Arg Thr Gly Asp Glu Pro Cys Arg Glu Phe His
          85           90           95

Gly Asn Gly Phe Pro Gly Pro Thr Gln Leu Thr Pro Gly Glu Cys Gly
          100          105          110

Leu Pro Ala Pro Ser Ser Leu Leu Gln His Ala Ser Ala Pro Val Arg
          115          120          125

Thr Gly Ser Glu Gly Gln Val Val Gly Cys Pro Arg Ala Arg Gly Glu
          130          135          140

Thr Gly Glu Gly Leu Ser Leu Ala Phe Leu Ser Ser Leu Met Phe Thr
          145          150          155          160

Ser Arg Asn Gly Leu Val Gly Cys
          165

```

<210> 2033  
 <211> 134  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (39)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2033

```

Met Pro Leu Leu Arg Gly Leu Leu Trp Leu Gln Val Leu Cys Ala Gly
 1           5           10           15

Pro Leu His Thr Glu Ala Val Val Leu Leu Val Pro Ser Asp Asp Gly
          20           25           30           35           40

```

20 25 30  
 Arg Ala Phe Leu Leu Arg Xaa Gly Phe Phe Ile Arg Arg Arg Met Tyr  
 35 40 45  
 Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn Val Ser Tyr Thr Arg  
 50 55 60  
 Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln Pro Gly Pro Pro Tyr  
 65 70 75 80  
 Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro Val Gly Asn Ser Met  
 85 90 95  
 Ala Met Ala Phe Gln Val Pro Pro Asn Ser Pro Gln Gly Ser Val Ala  
 100 105 110  
 Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr Pro Pro Pro Pro Tyr Glu  
 115 120 125  
 Gln Val Val Lys Ala Lys  
 130

&lt;210&gt; 2034

&lt;211&gt; 168

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (39)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2034

Met Pro Leu Leu Arg Gly Leu Leu Trp Leu Gln Val Leu Cys Ala Gly  
 1 5 10 15

Pro Leu His Thr Glu Ala Val Val Leu Leu Val Pro Ser Asp Asp Gly  
 20 25 30

Arg Ala Phe Leu Leu Arg Xaa Arg Leu Leu His Pro Glu Ala His Val  
 35 40 45

Pro Pro Ala Ala Asp Arg Gly Ala Ser Leu Gln Cys Val Leu His Gln  
 50 55 60

Ala Ala Pro Lys Ser Arg Pro Arg Ser Pro Ala Ala Gly Ala Ala Leu  
 65 70 75 80

Leu His Arg Pro Arg Arg Thr Gly Asp Glu Pro Cys Arg Glu Phe His  
 85 90 95

Gly Asn Gly Phe Pro Gly Pro Thr Gln Leu Thr Pro Gly Glu Cys Gly  
 100 105 110

Leu Pro Ala Pro Ser Ser Leu Leu Gln His Ala Ser Ala Pro Val Arg  
 115 120 125

Thr Gly Ser Glu Gly Gln Val Val Gly Cys Pro Arg Ala Arg Gly Glu  
 130 135 140

Thr Gly Glu Gly Leu Ser Leu Ala Phe Leu Ser Ser Leu Met Phe Thr  
 145 150 155 160

Ser Arg Asn Gly Leu Val Gly Cys  
 165

<210> 2035

<211> 134

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (39)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2035

Met Pro Leu Leu Arg Gly Leu Leu Trp Leu Gln Val Leu Cys Ala Gly  
 1 5 10 15

Pro Leu His Thr Glu Ala Val Val Leu Leu Val Pro Ser Asp Asp Gly  
 20 25 30

Arg Ala Phe Leu Leu Arg Xaa Gly Phe Phe Ile Arg Arg Arg Met Tyr  
 35 40 45

Pro Pro Pro Leu Ile Glu Glu Pro Ala Phe Asn Val Ser Tyr Thr Arg  
 50 55 60

Gln Pro Pro Asn Pro Gly Pro Gly Ala Gln Gln Pro Gly Pro Pro Tyr  
 65 70 75 80

Tyr Thr Asp Pro Gly Gly Pro Gly Met Asn Pro Val Gly Asn Ser Met  
 85 90 95

Ala Met Ala Phe Gln Val Pro Pro Asn Ser Pro Gln Gly Ser Val Ala  
 100 105 110

Cys Pro Pro Pro Pro Ala Tyr Cys Asn Thr Pro Pro Pro Pro Tyr Glu  
 115 120 125

Gln Val Val Lys Ala Lys.  
 130

<210> 2036

<211> 468

<212> PRT

<213> Homo sapiens

<400> 2036

Met Gly Arg Gly Trp Gly Phe Leu Phe Gly Leu Leu Gly Ala Val Trp  
 1 5 10 15

Leu Leu Ser Ser Gly His Gly Glu Glu Gln Pro Pro Glu Thr Ala Ala  
                   20                                  25                                  30  
 Gln Arg Cys Phe Cys Gln Val Ser Gly Tyr Leu Asp Asp Cys Thr Cys  
                   35                                  40                                  45  
 Asp Val Glu Thr Ile Asp Arg Phe Asn Asn Tyr Arg Leu Phe Pro Arg  
                   50                                  55                                  60  
 Leu Gln Lys Leu Leu Glu Ser Asp Tyr Phe Arg Tyr Tyr Lys Val Asn  
                   65                                  70                                  75                                  80  
 Leu Lys Arg Pro Cys Pro Phe Trp Asn Asp Ile Ser Gln Cys Gly Arg  
                                   85                                  90                                  95  
 Arg Asp Cys Ala Val Lys Pro Cys Gln Ser Asp Glu Val Pro Asp Gly  
                                   100                                  105                                  110  
 Ile Lys Ser Ala Ser Tyr Lys Tyr Ser Glu Glu Ala Asn Asn Leu Ile  
                   115                                  120                                  125  
 Glu Glu Cys Glu Gln Ala Glu Arg Leu Gly Ala Val Asp Glu Ser Leu  
                   130                                  135                                  140  
 Ser Glu Glu Thr Gln Lys Ala Val Leu Gln Trp Thr Lys His Asp Asp  
                   145                                  150                                  155                                  160  
 Ser Ser Asp Asn Phe Cys Glu Ala Asp Asp Ile Gln Ser Pro Glu Ala  
                                   165                                  170                                  175  
 Glu Tyr Val Asp Leu Leu Leu Asn Pro Glu Arg Tyr Thr Gly Tyr Lys  
                   180                                  185                                  190  
 Gly Pro Asp Ala Trp Lys Ile Trp Asn Val Ile Tyr Glu Glu Asn Cys  
                   195                                  200                                  205  
 Phe Lys Pro Gln Thr Ile Lys Arg Pro Leu Asn Pro Leu Ala Ser Gly  
                   210                                  215                                  220  
 Gln Gly Thr Ser Glu Glu Asn Thr Phe Tyr Ser Trp Leu Glu Gly Leu  
                   225                                  230                                  235                                  240  
 Cys Val Glu Lys Arg Ala Phe Tyr Arg Leu Ile Ser Gly Leu His Ala  
                                   245                                  250                                  255  
 Ser Ile Asn Val His Leu Ser Ala Arg Tyr Leu Leu Gln Glu Thr Trp  
                   260                                  265                                  270  
 Leu Glu Lys Lys Trp Gly His Asn Ile Thr Glu Phe Gln Gln Arg Phe  
                   275                                  280                                  285  
 Asp Gly Ile Leu Thr Glu Gly Glu Gly Pro Arg Arg Leu Lys Asn Leu  
                   290                                  295                                  300  
 Tyr Phe Leu Tyr Leu Ile Glu Leu Arg Ala Leu Ser Lys Val Leu Pro  
                   305                                  310                                  315                                  320  
 Phe Phe Glu Arg Pro Asp Phe Gln Leu Phe Thr Gly Asn Lys Ile Gln  
                                   325                                  330                                  335

Asp Glu Glu Asn Lys Met Leu Leu Leu Glu Ile Leu His Glu Ile Lys  
                           340                          345                          350  
 Ser Phe Pro Leu His Phe Asp Glu Asn Ser Phe Phe Ala Gly Asp Lys  
                           355                          360                          365  
 Lys Glu Ala His Lys Leu Lys Glu Asp Phe Arg Leu His Phe Arg Asn  
                           370                          375                          380  
 Ile Ser Arg Ile Met Asp Cys Val Gly Cys Phe Lys Cys Arg Leu Trp  
 385                          390                          395                          400  
 Gly Lys Leu Gln Thr Gln Gly Leu Gly Thr Ala Leu Lys Ile Leu Phe  
                           405                          410                          415  
 Ser Glu Lys Leu Ile Ala Asn Met Pro Glu Ser Gly Pro Ser Tyr Glu  
                           420                          425                          430  
 Phe His Leu Thr Arg Gln Glu Ile Val Ser Leu Phe Asn Ala Phe Gly  
                           435                          440                          445  
 Arg Ile Ser Thr Ser Val Lys Glu Leu Glu Asn Phe Arg Asn Leu Leu  
                           450                          455                          460  
 Gln Asn Ile His  
 465

&lt;210&gt; 2037

&lt;211&gt; 314

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (227)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2037

Met Leu Leu Ala Gln Gly Leu Ile Leu His Phe Leu Gly Arg Ala Trp  
   1                          5                          10                          15  
 Thr Trp Pro Asp Ala Leu Asn Ile Glu Asn Ser Asp Ser Glu Ser Trp  
                           20                          25                          30  
 Thr Ser His Thr Val Lys Lys Phe Thr Ala Ser Phe Glu Ala Ser Leu  
                           35                          40                          45  
 Ser Gly Glu Arg Glu Phe Lys Thr Pro Thr Ile Ser Leu Lys Glu Thr  
                           50                          55                          60  
 Ile Gly Lys Tyr Ser Asp Asp His Glu Met Arg Asn Glu Val Tyr His  
                           65                          70                          75                          80  
 Arg Lys Ile Ile Ser Trp Phe Gly Asp Ser Pro Leu Ala Leu Phe Gly  
                           85                          90                          95  
 Leu His Gln Leu Ile Glu Tyr Gly Lys Lys Ser Gly Lys Lys Ala Gly  
                           100                          105                          110

Asp Trp Tyr Gly Pro Ala Val Val Ala His Ile Leu Arg Lys Ala Val  
 115 120 125  
 Glu Glu Ala Arg His Pro Asp Leu Gln Gly Ile Thr Ile Tyr Val Ala  
 130 135 140  
 Gln Asp Cys Thr Val Pro Val Arg Leu Gly Gly Glu Arg Thr Asn Thr  
 145 150 155 160  
 Asp Tyr Leu Glu Phe Val Lys Gly Ile Leu Ser Leu Glu Tyr Cys Val  
 165 170 175  
 Gly Ile Ile Gly Gly Lys Pro Lys Gln Ser Tyr Tyr Phe Ala Gly Phe  
 180 185 190  
 Gln Asp Asp Ser Leu Ile Tyr Met Asp Pro His Tyr Cys Gln Ser Phe  
 195 200 205  
 Val Asp Val Ser Ile Lys Asp Phe Pro Leu Glu Thr Phe His Cys Pro  
 210 215 220  
 Ser Pro Xaa Lys Met Ser Phe Arg Lys Met Asp Pro Ser Cys Thr Ile  
 225 230 235 240  
 Gly Phe Tyr Cys Arg Asn Val Gln Asp Phe Lys Arg Ala Ser Glu Glu  
 245 250 255  
 Ile Thr Lys Met Leu Lys Phe Ser Ser Lys Glu Lys Tyr Pro Leu Phe  
 260 265 270  
 Thr Phe Val Asn Gly His Ser Arg Asp Tyr Asp Phe Thr Ser Thr Thr  
 275 280 285  
 Thr Asn Glu Glu Asp Leu Phe Ser Glu Asp Glu Lys Lys Gln Leu Lys  
 290 295 300  
 Arg Phe Ser Thr Glu Glu Phe Val Leu Leu  
 305 310

&lt;210&gt; 2038

&lt;211&gt; 56

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2038

Met Arg Trp Leu Phe Val Leu Met Leu Ser Leu Pro Leu Pro Pro Thr  
 1 5 10 15  
 Pro Arg Gln Gly Pro Ala Cys Asp Val Pro Leu Pro Val Ser His Val  
 20 25 30  
 Phe Ser Leu Phe Asn Ser His Leu Gly Ala Arg Thr Cys Gly Val Trp  
 35 40 45  
 Phe Ser Leu Pro Val Ser Val Cys  
 50 55

&lt;210&gt; 2039

&lt;211&gt; 414

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2039

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Met Lys Ala Gln Thr Ala Leu Ser Phe Phe Leu Ile Leu Ile Thr Ser
 1              5              10              15

Leu Ser Gly Ser Gln Gly Ile Phe Pro Leu Ala Phe Phe Ile Tyr Val
      20              25              30

Pro Met Asn Glu Gln Ile Val Ile Gly Arg Leu Asp Glu Asp Ile Ile
      35              40              45

Leu Pro Ser Ser Phe Glu Arg Gly Ser Glu Val Val Ile His Trp Lys
      50              55              60

Tyr Gln Asp Ser Tyr Lys Val His Ser Tyr Tyr Lys Gly Ser Asp His
      65              70              75              80

Leu Glu Ser Gln Asp Pro Arg Tyr Ala Asn Arg Thr Ser Leu Phe Tyr
      85              90              95

Asn Glu Ile Gln Asn Gly Asn Ala Ser Leu Phe Phe Arg Arg Val Ser
      100              105              110

Leu Leu Asp Glu Gly Ile Tyr Thr Cys Tyr Val Gly Thr Ala Ile Gln
      115              120              125

Val Ile Thr Asn Lys Val Val Leu Lys Val Gly Val Phe Leu Thr Pro
      130              135              140

Val Met Lys Tyr Glu Lys Arg Asn Thr Asn Ser Phe Leu Ile Cys Ser
      145              150              155              160

Val Leu Ser Val Tyr Pro Arg Pro Ile Ile Thr Trp Lys Met Asp Asn
      165              170              175

Thr Pro Ile Ser Glu Asn Asn Met Glu Glu Thr Gly Ser Leu Asp Ser
      180              185              190

Phe Ser Ile Asn Ser Pro Leu Asn Ile Thr Gly Ser Asn Ser Ser Tyr
      195              200              205

Glu Cys Thr Ile Glu Asn Ser Leu Leu Lys Gln Thr Trp Thr Gly Arg
      210              215              220

Trp Thr Met Lys Asp Gly Leu His Lys Met Gln Ser Glu His Val Ser
      225              230              235              240

Leu Ser Cys Gln Pro Val Asn Asp Tyr Phe Ser Pro Asn Gln Asp Phe
      245              250              255

Lys Val Thr Trp Ser Arg Met Lys Ser Gly Thr Phe Ser Val Leu Ala
      260              265              270

Tyr Tyr Leu Ser Ser Ser Gln Asn Thr Ile Ile Asn Glu Ser Arg Phe

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275                      280                      285  
 Ser Trp Asn Lys Glu Leu Ile Asn Gln Ser Asp Phe Ser Met Asn Leu  
 290                      295                      300  
 Met Asp Leu Asn Leu Ser Asp Ser Gly Glu Tyr Leu Cys Asn Ile Ser  
 305                      310                      315  
 Ser Asp Glu Tyr Thr Leu Leu Thr Ile His Thr Val His Val Glu Pro  
 325                      330                      335  
 Ser Gln Glu Thr Ala Ser His Asn Lys Gly Leu Trp Ile Leu Val Pro  
 340                      345                      350  
 Ser Ala Ile Leu Ala Ala Phe Leu Leu Ile Trp Arg Val Lys Cys Cys  
 355                      360                      365  
 Arg Ala Gln Leu Glu Ala Arg Arg Ser Arg His Pro Ala Asp Gly Ala  
 370                      375                      380  
 Gln Gln Glu Arg Cys Cys Val Pro Pro Gly Glu Arg Cys Pro Ser Ala  
 385                      390                      395                      400  
 Pro Asp Asn Gly Glu Glu Asn Val Pro Leu Ser Gly Lys Val  
 405                      410

&lt;210&gt; 2040

&lt;211&gt; 200

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2040

Met Ala Ser Ser Leu Thr Cys Thr Gly Val Ile Trp Ala Leu Leu Ser  
 1                      5                      10                      15  
 Phe Leu Cys Ala Ala Thr Ser Cys Val Gly Phe Phe Met Pro Tyr Trp  
 20                      25                      30  
 Leu Trp Gly Ser Gln Leu Gly Lys Pro Val Ser Phe Gly Thr Phe Arg  
 35                      40                      45  
 Arg Cys Ser Tyr Pro Val His Asp Glu Ser Arg Gln Met Met Val Met  
 50                      55                      60  
 Val Glu Glu Cys Gly Arg Tyr Ala Ser Phe Gln Gly Ile Pro Ser Ala  
 65                      70                      75                      80  
 Glu Trp Arg Ile Cys Thr Ile Val Thr Gly Leu Gly Cys Gly Leu Leu  
 85                      90                      95  
 Leu Leu Val Ala Leu Thr Ala Leu Met Gly Cys Cys Val Ser Asp Leu  
 100                      105                      110  
 Ile Ser Arg Thr Val Gly Arg Val Ala Gly Gly Ile Gln Phe Leu Gly  
 115                      120                      125  
 Gly Leu Leu Ile Gly Ala Gly Cys Ala Leu Tyr Pro Leu Gly Trp Asp  
 130                      135                      140

Ser Glu Glu Val Arg Gln Thr Cys Gly Tyr Thr Ser Gly Gln Phe Asp  
 145 150 155 160

Leu Gly Lys Cys Glu Ile Gly Trp Ala Tyr Tyr Cys Thr Gly Ala Gly  
 165 170 175

Ala Thr Ala Ala Met Leu Leu Cys Thr Trp Leu Ala Cys Phe Ser Gly  
 180 185 190

Lys Lys Gln Lys His Tyr Pro Tyr  
 195 200

<210> 2041  
 <211> 249  
 <212> PRT  
 <213> Homo sapiens

<400> 2041  
 Met Ile Gly Met Ser Thr Lys Ala Val Leu Trp Arg Cys Phe Ser Thr  
 1 5 10 15

Val Val Ile Phe Leu Phe Leu Leu Asp Glu Gln Thr Ser Leu Leu Val  
 20 25 30

Leu Val Pro Ala Gly Val Gly Ala Ala Ile Glu Leu Trp Lys Val Lys  
 35 40 45

Lys Ala Leu Lys Met Thr Ile Phe Trp Arg Gly Leu Met Pro Glu Phe  
 50 55 60

Gln Phe Gly Thr Tyr Ser Glu Ser Glu Arg Lys Thr Glu Glu Tyr Asp  
 65 70 75 80

Thr Gln Ala Met Lys Tyr Leu Ser Tyr Leu Leu Tyr Pro Leu Cys Val  
 85 90 95

Gly Gly Ala Val Tyr Ser Leu Leu Asn Ile Lys Tyr Lys Ser Trp Tyr  
 100 105 110

Ser Trp Leu Ile Asn Ser Phe Val Asn Gly Val Tyr Ala Phe Gly Phe  
 115 120 125

Leu Phe Met Leu Pro Gln Leu Phe Val Asn Tyr Lys Val Arg Arg Cys  
 130 135 140

Val Leu Pro Ala Ala Arg Pro Pro Ser Pro Val Leu Pro Thr Ala Asp  
 145 150 155 160

Leu Gly Leu Ser Leu Leu Phe Gln Leu Lys Ser Val Ala His Leu Pro  
 165 170 175

Trp Lys Ala Phe Thr Tyr Lys Ala Phe Asn Thr Phe Ile Asp Asp Val  
 180 185 190

Phe Ala Phe Ile Ile Thr Met Pro Thr Ser His Arg Leu Ala Cys Phe  
 195 200 205

Arg Asp Asp Val Val Phe Leu Val Tyr Leu Tyr Gln Arg Trp Leu Tyr  
 210 215 220

Pro Val Asp Lys Arg Arg Val Asn Glu Phe Gly Glu Ser Tyr Glu Glu  
 225 230 235 240

Lys Ala Thr Arg Ala Pro His Thr Asp  
 245

<210> 2042

<211> 249

<212> PRT

<213> Homo sapiens

<400> 2042

Met Ile Gly Met Ser Thr Lys Ala Val Leu Trp Arg Cys Phe Ser Thr  
 1 5 10 15

Val Val Ile Phe Leu Phe Leu Leu Asp Glu Gln Thr Ser Leu Leu Val  
 20 25 30

Leu Val Pro Ala Gly Val Gly Ala Ala Ile Glu Leu Trp Lys Val Lys  
 35 40 45

Lys Ala Leu Lys Met Thr Ile Phe Trp Arg Gly Leu Met Pro Glu Phe  
 50 55 60

Gln Phe Gly Thr Tyr Ser Glu Ser Glu Arg Lys Thr Glu Glu Tyr Asp  
 65 70 75 80

Thr Gln Ala Met Lys Tyr Leu Ser Tyr Leu Leu Tyr Pro Leu Cys Val  
 85 90 95

Gly Gly Ala Val Tyr Ser Leu Leu Asn Ile Lys Tyr Lys Ser Trp Tyr  
 100 105 110

Ser Trp Leu Ile Asn Ser Phe Val Asn Gly Val Tyr Ala Phe Gly Phe  
 115 120 125

Leu Phe Met Leu Pro Gln Leu Phe Val Asn Tyr Lys Val Arg Arg Cys  
 130 135 140

Val Leu Pro Ala Ala Arg Pro Pro Ser Pro Val Leu Pro Thr Ala Asp  
 145 150 155 160

Leu Gly Leu Ser Leu Leu Phe Gln Leu Lys Ser Val Ala His Leu Pro  
 165 170 175

Trp Lys Ala Phe Thr Tyr Lys Ala Phe Asn Thr Phe Ile Asp Asp Val  
 180 185 190

Phe Ala Phe Ile Ile Thr Met Pro Thr Ser His Arg Leu Ala Cys Phe  
 195 200 205

Arg Asp Asp Val Val Phe Leu Val Tyr Leu Tyr Gln Arg Trp Leu Tyr  
 210 215 220

Pro Val Asp Lys Arg Arg Val Asn Glu Phe Gly Glu Ser Tyr Glu Glu

225                                      230                                      235                                      240

Lys Ala Thr Arg Ala Pro His Thr Asp  
245

<210> 2043  
<211> 60  
<212> PRT  
<213> Homo sapiens

<400> 2043  
Met Ser Pro Thr Gly Leu Leu Val Val Phe Ala Pro Val Val Leu Gly  
1                                      5                                      10                                      15  
Leu Lys Ala Ile Thr Leu Ala Ala Leu Leu Leu Ala Leu Ala Thr Ser  
20                                      25                                      30  
Arg Arg Ser Pro Gly Gln Glu Asp Val Lys Thr Thr Gly Pro Ala Gly  
35                                      40                                      45  
Ala Met Asn Thr Leu Ala Trp Ser Lys Gly Gln Glu  
50                                      55                                      60

<210> 2044  
<211> 60  
<212> PRT  
<213> Homo sapiens

<400> 2044  
Met Ser Pro Thr Gly Leu Leu Val Val Phe Ala Pro Val Val Leu Gly  
1                                      5                                      10                                      15  
Leu Lys Ala Ile Thr Leu Ala Ala Leu Leu Leu Ala Leu Ala Thr Ser  
20                                      25                                      30  
Arg Arg Ser Pro Gly Gln Glu Asp Val Lys Thr Thr Gly Pro Ala Gly  
35                                      40                                      45  
Ala Met Asn Thr Leu Ala Trp Ser Lys Gly Gln Glu  
50                                      55                                      60

<210> 2045  
<211> 310  
<212> PRT  
<213> Homo sapiens

<400> 2045  
Met Ala Leu Arg Arg Pro Pro Arg Leu Arg Leu Cys Ala Arg Leu Pro  
1                                      5                                      10                                      15  
Asp Phe Phe Leu Leu Leu Phe Arg Gly Cys Leu Ile Gly Ala Val  
20                                      25                                      30  
Asn Leu Lys Ser Ser Asn Arg Thr Pro Val Val Gln Glu Phe Glu Ser

35					40					45					
Val	Glu	Leu	Ser	Cys	Ile	Ile	Thr	Asp	Ser	Gln	Thr	Ser	Asp	Pro	Arg
50					55					60					
Ile	Glu	Trp	Lys	Lys	Ile	Gln	Asp	Glu	Gln	Thr	Thr	Tyr	Val	Phe	Phe
65					70					75					80
Asp	Asn	Lys	Ile	Gln	Gly	Asp	Leu	Ala	Gly	Arg	Ala	Glu	Ile	Leu	Gly
				85					90					95	
Lys	Thr	Ser	Leu	Lys	Ile	Trp	Asn	Val	Thr	Arg	Arg	Asp	Ser	Ala	Leu
			100					105					110		
Tyr	Arg	Cys	Glu	Val	Val	Ala	Arg	Asn	Asp	Arg	Lys	Glu	Ile	Asp	Glu
		115					120					125			
Ile	Val	Ile	Glu	Leu	Thr	Val	Gln	Val	Lys	Pro	Val	Thr	Pro	Val	Cys
		130					135					140			
Arg	Val	Pro	Lys	Ala	Val	Pro	Val	Gly	Lys	Met	Ala	Thr	Leu	His	Cys
145				150						155					160
Gln	Glu	Ser	Glu	Gly	His	Pro	Arg	Pro	His	Tyr	Ser	Trp	Tyr	Arg	Asn
				165					170					175	
Asp	Val	Pro	Leu	Pro	Thr	Asp	Ser	Arg	Ala	Asn	Pro	Arg	Phe	Arg	Asn
			180					185					190		
Ser	Ser	Phe	His	Leu	Asn	Ser	Glu	Thr	Gly	Thr	Leu	Val	Phe	Thr	Ala
		195					200					205			
Val	His	Lys	Asp	Asp	Ser	Gly	Gln	Tyr	Tyr	Cys	Ile	Ala	Ser	Asn	Asp
		210				215					220				
Ala	Gly	Ser	Ala	Arg	Cys	Glu	Glu	Gln	Glu	Met	Glu	Val	Tyr	Asp	Leu
225				230						235					240
Asn	Ile	Gly	Gly	Ile	Ile	Gly	Gly	Val	Leu	Val	Val	Leu	Ala	Val	Leu
				245					250					255	
Ala	Leu	Ile	Thr	Leu	Gly	Ile	Cys	Cys	Ala	Tyr	Arg	Arg	Gly	Tyr	Phe
			260				265						270		
Ile	Asn	Asn	Lys	Gln	Asp	Gly	Glu	Ser	Tyr	Lys	Asn	Pro	Gly	Lys	Pro
		275					280					285			
Asp	Gly	Val	Asn	Tyr	Ile	Arg	Thr	Asp	Glu	Glu	Gly	Asp	Phe	Arg	His
	290					295					300				
Lys	Ser	Ser	Phe	Val	Ile										
305					310										

&lt;210&gt; 2046

&lt;211&gt; 310

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2046

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Met Ala Leu Arg Arg Pro Pro Arg Leu Arg Leu Cys Ala Arg Leu Pro
 1          5          10          15

Asp Phe Phe Leu Leu Leu Leu Phe Arg Gly Cys Leu Ile Gly Ala Val
    20          25          30

Asn Leu Lys Ser Ser Asn Arg Thr Pro Val Val Gln Glu Phe Glu Ser
    35          40          45

Val Glu Leu Ser Cys Ile Ile Thr Asp Ser Gln Thr Ser Asp Pro Arg
    50          55          60

Ile Glu Trp Lys Lys Ile Gln Asp Glu Gln Thr Thr Tyr Val Phe Phe
    65          70          75          80

Asp Asn Lys Ile Gln Gly Asp Leu Ala Gly Arg Ala Glu Ile Leu Gly
    85          90          95

Lys Thr Ser Leu Lys Ile Trp Asn Val Thr Arg Arg Asp Ser Ala Leu
    100          105          110

Tyr Arg Cys Glu Val Val Ala Arg Asn Asp Arg Lys Glu Ile Asp Glu
    115          120          125

Ile Val Ile Glu Leu Thr Val Gln Val Lys Pro Val Thr Pro Val Cys
    130          135          140

Arg Val Pro Lys Ala Val Pro Val Gly Lys Met Ala Thr Leu His Cys
    145          150          155          160

Gln Glu Ser Glu Gly His Pro Arg Pro His Tyr Ser Trp Tyr Arg Asn
    165          170          175

Asp Val Pro Leu Pro Thr Asp Ser Arg Ala Asn Pro Arg Phe Arg Asn
    180          185          190

Ser Ser Phe His Leu Asn Ser Glu Thr Gly Thr Leu Val Phe Thr Ala
    195          200          205

Val His Lys Asp Asp Ser Gly Gln Tyr Tyr Cys Ile Ala Ser Asn Asp
    210          215          220

Ala Gly Ser Ala Arg Cys Glu Glu Gln Glu Met Glu Val Tyr Asp Leu
    225          230          235          240

Asn Ile Gly Gly Ile Ile Gly Gly Val Leu Val Val Leu Ala Val Leu
    245          250          255

Ala Leu Ile Thr Leu Gly Ile Cys Cys Ala Tyr Arg Arg Gly Tyr Phe
    260          265          270

Ile Asn Asn Lys Gln Asp Gly Glu Ser Tyr Lys Asn Pro Gly Lys Pro
    275          280          285

Asp Gly Val Asn Tyr Ile Arg Thr Asp Glu Glu Gly Asp Phe Arg His
    290          295          300

Lys Ser Ser Phe Val Ile
    305          310

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&lt;210&gt; 2047

&lt;211&gt; 310

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2047

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Met Ala Leu Arg Arg Pro Pro Arg Leu Arg Leu Cys Ala Arg Leu Pro
  1              5              10              15

Asp Phe Phe Leu Leu Leu Leu Phe Arg Gly Cys Leu Ile Gly Ala Val
      20              25              30

Asn Leu Lys Ser Ser Asn Arg Thr Pro Val Val Gln Glu Phe Glu Ser
      35              40              45

Val Glu Leu Ser Cys Ile Ile Thr Asp Ser Gln Thr Ser Asp Pro Arg
      50              55              60

Ile Glu Trp Lys Lys Ile Gln Asp Glu Gln Thr Thr Tyr Val Phe Phe
      65              70              75              80

Asp Asn Lys Ile Gln Gly Asp Leu Ala Gly Arg Ala Glu Ile Leu Gly
      85              90              95

Lys Thr Ser Leu Lys Ile Trp Asn Val Thr Arg Arg Asp Ser Ala Leu
      100             105             110

Tyr Arg Cys Glu Val Val Ala Arg Asn Asp Arg Lys Glu Ile Asp Glu
      115             120             125

Ile Val Ile Glu Leu Thr Val Gln Val Lys Pro Val Thr Pro Val Cys
      130             135             140

Arg Val Pro Lys Ala Val Pro Val Gly Lys Met Ala Thr Leu His Cys
      145             150             155             160

Gln Glu Ser Glu Gly His Pro Arg Pro His Tyr Ser Trp Tyr Arg Asn
      165             170             175

Asp Val Pro Leu Pro Thr Asp Ser Arg Ala Asn Pro Arg Phe Arg Asn
      180             185             190

Ser Ser Phe His Leu Asn Ser Glu Thr Gly Thr Leu Val Phe Thr Ala
      195             200             205

Val His Lys Asp Asp Ser Gly Gln Tyr Tyr Cys Ile Ala Ser Asn Asp
      210             215             220

Ala Gly Ser Ala Arg Cys Glu Glu Gln Glu Met Glu Val Tyr Asp Leu
      225             230             235             240

Asn Ile Gly Gly Ile Ile Gly Gly Val Leu Val Val Leu Ala Val Leu
      245             250             255

Ala Leu Ile Thr Leu Gly Ile Cys Cys Ala Tyr Arg Arg Gly Tyr Phe
      260             265             270

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Ile Asn Asn Lys Gln Asp Gly Glu Ser Tyr Lys Asn Pro Gly Lys Pro  
 275 280 285

Asp Gly Val Asn Tyr Ile Arg Thr Asp Glu Glu Gly Asp Phe Arg His  
 290 295 300

Lys Ser Ser Phe Val Ile  
 305 310

<210> 2048

<211> 148

<212> PRT

<213> Homo sapiens

<400> 2048

Met His Met Leu Asn Gly Ala Leu Leu Ala Leu Leu Phe Pro Val Val  
 1 5 10 15

Asn Thr Arg Leu Leu Pro Phe Glu Leu Glu Ile Tyr Tyr Ile Gln His  
 20 25 30

Val Met Leu Tyr Val Val Pro Ile Tyr Leu Leu Trp Lys Gly Gly Ala  
 35 40 45

Tyr Thr Pro Glu Pro Leu Ser Ser Phe Arg Trp Ala Leu Leu Ser Thr  
 50 55 60

Gly Leu Met Phe Phe Tyr His Phe Ser Val Leu Gln Ile Leu Gly Leu  
 65 70 75 80

Val Thr Glu Val Asn Leu Asn Asn Met Leu Cys Pro Ala Ile Ser Asp  
 85 90 95

Pro Phe Tyr Gly Pro Trp Tyr Arg Ile Trp Ala Ser Gly His Gln Thr  
 100 105 110

Leu Met Thr Met Thr His Gly Lys Leu Val Ile Leu Phe Ser Tyr Met  
 115 120 125

Ala Gly Pro Leu Cys Lys Tyr Leu Leu Asp Leu Leu Arg Leu Pro Ala  
 130 135 140

Lys Lys Ile Asp  
 145

<210> 2049

<211> 413

<212> PRT

<213> Homo sapiens

<400> 2049

Met Leu Lys Ala Leu Phe Leu Thr Met Leu Thr Leu Ala Leu Val Lys  
 1 5 10 15

Ser Gln Asp Thr Glu Glu Thr Ile Thr Tyr Thr Gln Cys Thr Asp Gly  
 20 25 30



Tyr Glu Trp Asp Pro Val Arg Gln Gln Cys Lys Asp Ile Asp Glu Cys  
 35 40 45  
 Asp Ile Val Pro Asp Ala Cys Lys Gly Gly Met Lys Cys Val Asn His  
 50 55 60  
 Tyr Gly Gly Tyr Leu Cys Leu Pro Lys Thr Ala Gln Ile Ile Val Asn  
 65 70 75 80  
 Asn Glu Gln Pro Gln Gln Glu Thr Gln Pro Ala Glu Gly Thr Ser Gly  
 85 90 95  
 Ala Thr Thr Gly Val Val Ala Ala Ser Ser Met Ala Thr Ser Gly Val  
 100 105 110  
 Leu Pro Gly Gly Gly Phe Val Ala Ser Ala Ala Ala Val Ala Gly Pro  
 115 120 125  
 Glu Met Gln Thr Gly Arg Asn Asn Phe Val Ile Arg Arg Asn Pro Ala  
 130 135 140  
 Asp Pro Gln Arg Ile Pro Ser Asn Pro Ser His Arg Ile Gln Cys Ala  
 145 150 155 160  
 Ala Gly Tyr Glu Gln Ser Glu His Asn Val Cys Gln Asp Ile Asp Glu  
 165 170 175  
 Cys Thr Ala Gly Thr His Asn Cys Arg Ala Asp Gln Val Cys Ile Asn  
 180 185 190  
 Leu Arg Gly Ser Phe Ala Cys Gln Cys Pro Pro Gly Tyr Gln Lys Arg  
 195 200 205  
 Gly Glu Gln Cys Val Asp Ile Asp Glu Cys Arg Thr Ser Ser Tyr Leu  
 210 215 220  
 Cys Gln Tyr Gln Cys Val Asn Glu Pro Gly Lys Phe Ser Cys Met Cys  
 225 230 235 240  
 Pro Gln Gly Tyr Gln Val Val Arg Ser Arg Thr Cys Gln Asp Ile Asn  
 245 250 255  
 Glu Cys Glu Thr Thr Asn Glu Cys Arg Glu Asp Glu Met Cys Trp Asn  
 260 265 270  
 Tyr His Gly Gly Phe Arg Cys Tyr Pro Arg Asn Pro Cys Gln Asp Pro  
 275 280 285  
 Tyr Ile Leu Thr Pro Glu Asn Arg Cys Val Cys Pro Val Ser Asn Ala  
 290 295 300  
 Met Cys Arg Glu Leu Pro Gln Ser Ile Val Tyr Lys Tyr Met Ser Ile  
 305 310 315 320  
 Arg Ser Asp Arg Ser Val Pro Ser Asp Ile Phe Gln Ile Gln Ala Thr  
 325 330 335  
 Thr Ile Tyr Ala Asn Thr Ile Asn Thr Phe Arg Ile Lys Ser Gly Asn  
 340 345 350

Glu Asn Gly Glu Phe Tyr Leu Arg Gln Thr Ser Pro Val Ser Ala Met  
355 360 365

Leu Val Leu Val Lys Ser Leu Ser Gly Pro Arg Glu His Ile Val Asp  
370 375 380

Leu Glu Met Leu Thr Val Ser Ser Ile Gly Thr Phe Arg Thr Ser Ser  
385 390 395 400

Val Leu Arg Leu Thr Ile Ile Val Gly Pro Phe Ser Phe  
405 410

<210> 2050

<211> 683

<212> PRT

<213> Homo sapiens

<400> 2050

Met Leu Phe Ile Phe Asn Phe Leu Phe Ser Pro Leu Pro Thr Pro Ala  
1 5 10 15

Leu Ile Cys Ile Leu Thr Phe Gly Ala Ala Ile Phe Leu Trp Leu Ile  
20 25 30

Thr Arg Pro Gln Pro Val Leu Pro Leu Leu Asp Leu Asn Asn Gln Ser  
35 40 45

Val Gly Ile Glu Gly Gly Ala Arg Lys Gly Val Ser Gln Lys Asn Asn  
50 55 60

Asp Leu Thr Ser Cys Cys Phe Ser Asp Ala Lys Thr Met Tyr Glu Val  
65 70 75 80

Phe Gln Arg Gly Leu Ala Val Ser Asp Asn Gly Pro Cys Leu Gly Tyr  
85 90 95

Arg Lys Pro Asn Gln Pro Tyr Arg Trp Leu Ser Tyr Lys Gln Val Ser  
100 105 110

Asp Arg Ala Glu Tyr Leu Gly Ser Cys Leu Leu His Lys Gly Tyr Lys  
115 120 125

Ser Ser Pro Asp Gln Phe Val Gly Ile Phe Ala Gln Asn Arg Pro Glu  
130 135 140

Trp Ile Ile Ser Glu Leu Ala Cys Tyr Thr Tyr Ser Met Val Ala Val  
145 150 155 160

Pro Leu Tyr Asp Thr Leu Gly Pro Glu Ala Ile Val His Ile Val Asn  
165 170 175

Lys Ala Asp Ile Ala Met Val Ile Cys Asp Thr Pro Gln Lys Ala Leu  
180 185 190

Val Leu Ile Gly Asn Val Glu Lys Gly Phe Thr Pro Ser Leu Lys Val  
195 200 205

Ile Ile Leu Met Asp Pro Phe Asp Asp Asp Leu Lys Gln Arg Gly Glu  
 210 215 220  
 Lys Ser Gly Ile Glu Ile Leu Ser Leu Tyr Asp Ala Glu Asn Leu Gly  
 225 230 235 240  
 Lys Glu His Phe Arg Lys Pro Val Pro Pro Ser Pro Glu Asp Leu Ser  
 245 250 255  
 Val Ile Cys Phe Thr Ser Gly Thr Thr Gly Asp Pro Lys Gly Ala Met  
 260 265 270  
 Ile Thr His Gln Asn Ile Val Ser Asn Ala Ala Ala Phe Leu Lys Cys  
 275 280 285  
 Val Glu His Ala Tyr Glu Pro Thr Pro Asp Asp Val Ala Ile Ser Tyr  
 290 295 300  
 Leu Pro Leu Ala His Met Phe Glu Arg Ile Val Gln Ala Val Val Tyr  
 305 310 315 320  
 Ser Cys Gly Ala Arg Val Gly Phe Phe Gln Gly Asp Ile Arg Leu Leu  
 325 330 335  
 Ala Asp Asp Met Lys Thr Leu Lys Pro Thr Leu Phe Pro Ala Val Pro  
 340 345 350  
 Arg Leu Leu Asn Arg Ile Tyr Asp Lys Val Gln Asn Glu Ala Lys Thr  
 355 360 365  
 Pro Leu Lys Lys Phe Leu Leu Lys Leu Ala Val Ser Ser Lys Phe Lys  
 370 375 380  
 Glu Leu Gln Lys Gly Ile Ile Arg His Asp Ser Phe Trp Asp Lys Leu  
 385 390 395 400  
 Ile Phe Ala Lys Ile Gln Asp Ser Leu Gly Gly Arg Val Arg Val Ile  
 405 410 415  
 Val Thr Gly Ala Ala Pro Met Ser Thr Ser Val Met Thr Phe Phe Arg  
 420 425 430  
 Ala Ala Met Gly Cys Gln Val Tyr Glu Ala Tyr Gly Gln Thr Glu Cys  
 435 440 445  
 Thr Gly Gly Cys Thr Phe Thr Leu Pro Gly Asp Trp Thr Ser Gly His  
 450 455 460  
 Val Gly Val Pro Leu Ala Cys Asn Tyr Val Lys Leu Glu Asp Val Ala  
 465 470 475 480  
 Asp Met Asn Tyr Phe Thr Val Asn Asn Glu Gly Glu Val Cys Ile Lys  
 485 490 495  
 Gly Thr Asn Val Phe Lys Gly Tyr Leu Lys Asp Pro Glu Lys Thr Gln  
 500 505 510  
 Glu Ala Leu Asp Ser Asp Gly Trp Leu His Thr Gly Asp Ile Gly Arg  
 515 520 525

Trp Leu Pro Asn Gly Thr Leu Lys Ile Ile Asp Arg Lys Lys Asn Ile  
 530 535 540  
 Phe Lys Leu Ala Gln Gly Glu Tyr Ile Ala Pro Glu Lys Ile Glu Asn  
 545 550 555 560  
 Ile Tyr Asn Arg Ser Gln Pro Val Leu Gln Ile Phe Val His Gly Glu  
 565 570 575  
 Ser Leu Arg Ser Ser Leu Val Gly Val Val Val Pro Asp Thr Asp Val  
 580 585 590  
 Leu Pro Ser Phe Ala Ala Lys Leu Gly Val Lys Gly Ser Phe Glu Glu  
 595 600 605  
 Leu Cys Gln Asn Gln Val Val Arg Glu Ala Ile Leu Glu Asp Leu Gln  
 610 615 620  
 Lys Ile Gly Lys Glu Ser Gly Leu Lys Thr Phe Glu Gln Val Lys Ala  
 625 630 635 640  
 Ile Phe Leu His Pro Glu Pro Phe Ser Ile Glu Asn Gly Leu Leu Thr  
 645 650 655  
 Pro Thr Leu Lys Ala Lys Arg Gly Glu Leu Ser Lys Tyr Phe Arg Thr  
 660 665 670  
 Gln Ile Asp Ser Leu Tyr Glu His Ile Gln Asp  
 675 680

&lt;210&gt; 2051

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2051

Met Ala Pro Ser Gly Pro Gly Ser Ser Ala Arg Arg Arg Cys Arg Arg  
 1 5 10 15  
 Val Leu Tyr Trp Ile Pro Val Val Phe Ile Thr Leu Leu Leu Gly Trp  
 20 25 30  
 Ser Tyr Tyr Ala Tyr Ala Ile Gln Leu Cys Ile Val Ser Met Glu Asn  
 35 40 45  
 Thr Gly Glu Gln Val Val Cys Leu Met Ala Tyr His Leu Leu Phe Ala  
 50 55 60  
 Met Phe Val Trp Ser Tyr Trp Lys Thr Ile Phe Thr Leu Pro Met Asn  
 65 70 75 80  
 Pro Ser Lys Glu Phe His Leu Ser Tyr Ala Glu Lys Asp Leu Leu Glu  
 85 90 95  
 Arg Glu Pro Arg Gly Glu Ala His Gln Glu Val Leu Arg Arg Ala Ala  
 100 105 110  
 Lys Asp Leu Pro Ile Tyr Thr Arg Thr Met Ser Gly Ala Ile Arg Tyr

115	120	125
Cys Asp Arg Cys Gln Leu Ile Lys Pro Asp Arg Cys His His Cys Ser		
130	135	140
Val Cys Asp Lys Cys Ile Leu Lys Met Asp His His Cys Pro Trp Val		
145	150	155
Asn Asn Cys Val Gly Phe Ser Asn Tyr Lys Phe Phe Leu Leu Phe Leu		
165	170	175
Ala Tyr Ser Leu Leu Tyr Cys Leu Phe Ile Ala Ala Thr Asp Leu Gln		
180	185	190
Tyr Phe Ile Lys Phe Trp Thr Asn Gly Leu Pro Asp Thr Gln Ala Lys		
195	200	205
Phe His Ile Met Phe Leu Phe Phe Ala Ala Ala Met Phe Ser Val Ser		
210	215	220
Leu Ser Ser Leu Phe Gly Tyr His Cys Trp Leu Val Ser Lys Asn Lys		
225	230	235
Ser Thr Leu Glu Ala Phe Arg Ser Pro Val Phe Arg His Gly Thr Asp		
245	250	255
Lys Asn Gly Phe Ser Leu Gly Phe Ser Lys Asn Met Arg Gln Val Phe		
260	265	270
Gly Asp Glu Lys Lys Tyr Trp Leu Leu Pro Ile Phe Ser Ser Leu Gly		
275	280	285
Asp Gly Cys Ser Phe Pro Thr Leu Pro Cys		
290	295	

<210> 2052  
 <211> 286  
 <212> PRT  
 <213> Homo sapiens

<400> 2052  
 Met Ala Pro Ser Gly Pro Gly Ser Ser Ala Arg Arg Arg Cys Arg Arg  
 1 5 10 15  
 Val Leu Tyr Trp Ile Pro Val Val Phe Ile Thr Leu Leu Leu Gly Trp  
 20 25 30  
 Ser Tyr Tyr Ala Tyr Ala Ile Gln Leu Cys Ile Val Ser Met Glu Asn  
 35 40 45  
 Thr Gly Glu Gln Val Val Cys Leu Met Ala Tyr His Leu Leu Phe Ala  
 50 55 60  
 Met Phe Val Trp Ser Tyr Trp Lys Thr Ile Phe Thr Leu Pro Met Asn  
 65 70 75 80  
 Pro Ser Lys Glu Phe His Leu Ser Tyr Ala Glu Lys Asp Leu Leu Glu  
 85 90 95

Arg Glu Pro Arg Gly Glu Ala His Gln Glu Val Leu Arg Arg Ala Ala  
 100 105 110  
 Lys Asp Leu Pro Ile Tyr Thr Arg Thr Met Ser Gly Ala Ile Arg Tyr  
 115 120 125  
 Cys Asp Arg Cys Gln Leu Ile Lys Pro Asp Arg Cys His His Cys Ser  
 130 135 140  
 Val Cys Asp Lys Cys Ile Leu Lys Met Asp His His Cys Pro Trp Val  
 145 150 155 160  
 Asn Asn Cys Val Gly Phe Ser Asn Tyr Lys Phe Phe Leu Leu Phe Leu  
 165 170 175  
 Ala Tyr Ser Leu Leu Tyr Cys Leu Phe Ile Ala Ala Thr Asp Leu Gln  
 180 185 190  
 Tyr Phe Ile Lys Phe Trp Thr Asn Gly Leu Pro Asp Thr Gln Ala Lys  
 195 200 205  
 Phe His Ile Met Phe Leu Phe Phe Ala Ala Ala Met Phe Ser Val Ser  
 210 215 220  
 Leu Ser Ser Leu Phe Gly Tyr His Cys Trp Leu Val Ser Lys Asn Lys  
 225 230 235 240  
 Ser Thr Leu Glu Ala Phe Arg Ser Pro Val Phe Arg His Gly Thr Asp  
 245 250 255  
 Lys Asn Gly Phe Ser Leu Gly Phe Ser Lys Asn Met Arg Gln Val Leu  
 260 265 270  
 Val Met Arg Arg Ser Thr Gly Cys Tyr Pro Phe Phe Gln Val  
 275 280 285

&lt;210&gt; 2053

&lt;211&gt; 47

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2053

Met Ser His Gly Ser Gln Pro Phe Leu Leu Leu Leu Ser Leu His Ile  
 1 5 10 15

Leu Ile Leu Ala Gly Ser Phe Leu Leu Phe Ser Pro Tyr Thr Ala Lys  
 20 25 30

Pro Ser Phe Ser Ser Ser Phe Ile Val Phe Pro Arg Ala Glu Met  
 35 40 45

&lt;210&gt; 2054

&lt;211&gt; 914

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2054

Met Gly Pro Phe Lys Ser Ser Val Phe Ile Leu Ile Leu His Leu Leu  
 1 5 10 15  
 Glu Gly Ala Leu Ser Asn Ser Leu Ile Gln Leu Asn Asn Asn Gly Tyr  
 20 25 30  
 Glu Gly Ile Val Val Ala Ile Asp Pro Asn Val Pro Glu Asp Glu Thr  
 35 40 45  
 Leu Ile Gln Gln Ile Lys Asp Met Val Thr Gln Ala Ser Leu Tyr Leu  
 50 55 60  
 Phe Glu Ala Thr Gly Lys Arg Phe Tyr Phe Lys Asn Val Ala Ile Leu  
 65 70 75 80  
 Ile Pro Glu Thr Trp Lys Thr Lys Ala Asp Tyr Val Arg Pro Lys Leu  
 85 90 95  
 Glu Thr Tyr Lys Asn Ala Asp Val Leu Val Ala Glu Ser Thr Pro Pro  
 100 105 110  
 Gly Asn Asp Glu Pro Tyr Thr Glu Gln Met Gly Asn Cys Gly Glu Lys  
 115 120 125  
 Gly Glu Arg Ile His Leu Thr Pro Asp Phe Ile Ala Gly Lys Lys Leu  
 130 135 140  
 Ala Glu Tyr Gly Pro Gln Gly Arg Ala Phe Val His Glu Trp Ala His  
 145 150 155 160  
 Leu Arg Trp Gly Val Phe Asp Glu Tyr Asn Asn Asp Glu Lys Phe Tyr  
 165 170 175  
 Leu Ser Asn Gly Arg Ile Gln Ala Val Arg Cys Ser Ala Gly Ile Thr  
 180 185 190  
 Gly Thr Asn Val Val Lys Lys Cys Gln Gly Gly Ser Cys Tyr Thr Lys  
 195 200 205  
 Arg Cys Thr Phe Asn Lys Val Thr Gly Leu Tyr Glu Lys Gly Cys Glu  
 210 215 220  
 Phe Val Leu Gln Ser Arg Gln Thr Glu Lys Ala Ser Ile Met Phe Ala  
 225 230 235 240  
 Gln His Val Asp Ser Ile Val Glu Phe Cys Thr Glu Gln Asn His Asn  
 245 250 255  
 Lys Glu Ala Pro Asn Lys Gln Asn Gln Lys Cys Asn Leu Arg Ser Thr  
 260 265 270  
 Trp Glu Val Ile Arg Asp Ser Glu Asp Phe Lys Lys Thr Thr Pro Met  
 275 280 285  
 Thr Thr Gln Pro Pro Asn Pro Thr Phe Ser Leu Leu Gln Ile Gly Gln  
 290 295 300  
 Arg Ile Val Cys Leu Val Leu Asp Lys Ser Gly Ser Met Ala Thr Gly

305		310		315		320
Asn Arg Leu Asn Arg Leu Asn Gln Ala Gly Gln Leu Phe Leu Leu Gln						
		325		330		335
Thr Val Glu Leu Gly Ser Trp Val Gly Met Val Thr Phe Asp Ser Ala						
		340		345		350
Ala His Val Gln Ser Glu Leu Ile Gln Ile Asn Ser Gly Ser Asp Arg						
		355		360		365
Asp Thr Leu Ala Lys Arg Leu Pro Ala Ala Ala Ser Gly Gly Thr Ser						
		370		375		380
Ile Cys Ser Gly Leu Arg Ser Ala Phe Thr Val Ile Arg Lys Lys Tyr						
		385		390		395
Pro Thr Asp Gly Ser Glu Ile Val Leu Leu Thr Asp Gly Glu Asp Asn						
		405		410		415
Thr Ile Ser Gly Cys Phe Asn Glu Val Lys Gln Ser Gly Ala Ile Ile						
		420		425		430
His Thr Val Ala Leu Gly Pro Ser Ala Ala Gln Glu Leu Glu Glu Leu						
		435		440		445
Ser Lys Met Thr Gly Gly Leu Gln Thr Tyr Ala Ser Asp Gln Val Gln						
		450		455		460
Asn Asn Gly Leu Ile Asp Ala Phe Gly Ala Leu Ser Ser Gly Asn Gly						
		465		470		475
Ala Val Ser Gln Arg Ser Ile Gln Leu Glu Ser Lys Gly Leu Thr Leu						
		485		490		495
Gln Asn Ser Gln Trp Met Asn Gly Thr Val Ile Val Asp Ser Thr Val						
		500		505		510
Gly Lys Asp Thr Leu Phe Leu Ile Thr Trp Thr Thr Gln Pro Pro Gln						
		515		520		525
Ile Leu Leu Trp Asp Pro Ser Gly Gln Lys Gln Gly Gly Phe Val Val						
		530		535		540
Asp Lys Asn Thr Lys Met Ala Tyr Leu Gln Ile Pro Gly Ile Ala Lys						
		545		550		555
Val Gly Thr Trp Lys Tyr Ser Leu Gln Ala Ser Ser Gln Thr Leu Thr						
		565		570		575
Leu Thr Val Thr Ser Arg Ala Ser Asn Ala Thr Leu Pro Pro Ile Thr						
		580		585		590
Val Thr Ser Lys Thr Asn Lys Asp Thr Ser Lys Phe Pro Ser Pro Leu						
		595		600		605
Val Val Tyr Ala Asn Ile Arg Gln Gly Ala Ser Pro Ile Leu Arg Ala						
		610		615		620
Ser Val Thr Ala Leu Ile Glu Ser Val Asn Gly Lys Thr Val Thr Leu						



625		630		635		640
Glu Leu Leu Asp	Asn Gly Ala Gly Ala Asp	Ala Thr Lys Asp	Asp Gly			
	645		650		655	
Val Tyr Ser Arg	Tyr Phe Thr Thr Tyr Asp	Thr Asn Gly Arg	Tyr Ser			
	660		665		670	
Val Lys Val Arg	Ala Leu Gly Gly Val Asn Ala Ala	Arg Arg Arg Val				
	675		680		685	
Ile Pro Gln Gln	Ser Gly Ala Leu Tyr Ile Pro	Gly Trp Ile Glu Asn				
	690		695		700	
Asp Glu Ile Gln	Trp Asn Pro Pro Arg Pro	Glu Ile Asn Lys Asp Asp				
	705		710		715	
Val Gln His Lys	Gln Val Cys Phe Ser Arg Thr Ser Ser	Gly Gly Ser				
	725		730		735	
Phe Val Ala Ser	Asp Val Pro Asn Ala Pro Ile Pro	Asp Leu Phe Pro				
	740		745		750	
Pro Gly Gln Ile	Thr Asp Leu Lys Ala Glu Ile His	Gly Gly Ser Leu				
	755		760		765	
Ile Asn Leu Thr	Trp Thr Ala Pro Gly Asp Asp	Tyr Asp His Gly Thr				
	770		775		780	
Ala His Lys Tyr	Ile Ile Arg Ile Ser Thr Ser Ile Leu Asp Leu Arg					
	785		790		795	
Asp Lys Phe Asn	Glu Ser Leu Gln Val Asn Thr Thr Ala Leu Ile Pro					
	805		810		815	
Lys Glu Ala Asn	Ser Glu Glu Val Phe Leu Phe Lys Pro Glu Asn Ile					
	820		825		830	
Thr Phe Glu Asn	Gly Thr Asp Leu Phe Ile Ala Ile Gln Ala Val Asp					
	835		840		845	
Lys Val Asp Leu	Lys Ser Glu Ile Ser Asn Ile Ala Arg Val Ser Leu					
	850		855		860	
Phe Ile Pro Pro	Gln Thr Pro Pro Glu Thr Pro Ser Pro Asp Glu Thr					
	865		870		875	
Ser Ala Pro Cys	Pro Asn Ile His Ile Asn Ser Thr Ile Pro Gly Ile					
	885		890		895	
His Ile Leu Lys	Ile Met Trp Lys Trp Ile Gly Glu Leu Gln Leu Ser					
	900		905		910	
Ile Ala						

&lt;210&gt; 2055

&lt;211&gt; 83

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2055

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Met Ala Ser Cys Gly Leu Thr Gly Ala Ser Leu Pro Pro Cys Cys Cys
 1          5          10          15

Ser Ser Phe Leu Ala Ala Leu Lys Ser Met Phe Trp Gly Leu Gly Ser
          20          25          30

Leu Leu Trp Ser Leu Val Gly Ile Leu Ser Pro Ile Ser Ser Cys Phe
          35          40          45

Cys Val Tyr Thr Cys Leu Thr Pro Gly Ser Ser Ser Leu Phe Pro Arg
          50          55          60

Ala Val Thr Gln Lys Leu Glu Gln Ser Val Pro Thr Lys Ala Leu Trp
65          70          75          80

Gly Trp Met

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&lt;210&gt; 2056

&lt;211&gt; 68

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2056

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Met Ala Thr Val Gly Leu Ser Trp Lys Lys Glu Leu Val Ile Leu Leu
 1          5          10          15

Val Gly Pro Gly Ala Ala Ala Leu Gln Pro Thr His Thr Cys Cys Ser
          20          25          30

Leu Pro Ser Leu Ser Ser Leu Phe Pro Leu Arg Leu Asn Thr Lys Thr
          35          40          45

Ser Pro Lys Thr Thr Arg Thr Asn Leu Tyr Leu Leu Ser Ile Ala Pro
          50          55          60

Leu Ser His Leu
65

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&lt;210&gt; 2057

&lt;211&gt; 73

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2057

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Met Glu Leu Leu Lys Cys Ser Trp Gln Leu Phe Phe Ser Phe Leu Thr
 1          5          10          15

His Cys Ser Ala Ser Thr Ile Val Trp Leu Phe Val Gln His Arg Leu
          20          25          30

Ser Gln Ser His Asn Lys Pro Phe Phe Gly Ile Leu Gln Arg Cys His

```

35 40 45  
 Ser Trp His Leu Asn Arg Glu Ser Phe Val Pro Asn Gln Ser Phe Ser  
 50 55 60

Ile Tyr Glu Ser Cys Ser Ile Arg Lys  
 65 70

<210> 2058  
 <211> 85  
 <212> PRT  
 <213> Homo sapiens

<400> 2058  
 Met Gln Val Phe Phe Leu Ser Glu Ile Gly Met Leu Trp Val Val Val  
 1 5 10 15  
 Lys Met Ala His Ser Ala Met Leu Val Ser His Thr Gln Asp Pro Thr  
 20 25 30  
 Pro Ser Arg Trp Pro Cys Ser Leu Ala Gln Ser Ile Leu Leu Thr Cys  
 35 40 45  
 Ser Pro Gln His Arg Phe Ser Leu Glu Arg Lys Ile Gln Leu Pro Pro  
 50 55 60  
 Arg Arg Trp Trp Ala Glu Gly Arg Glu Gly Cys Trp Val Arg Glu Arg  
 65 70 75 80  
 Val Gly Glu Arg Thr  
 85

<210> 2059  
 <211> 51  
 <212> PRT  
 <213> Homo sapiens

<400> 2059  
 Met Leu Thr Leu Thr His Phe Val Ser Tyr Asp Tyr Phe Ile Val Lys  
 1 5 10 15  
 Arg Leu Val Gly Trp Leu Val Gly Trp Leu Val Cys Phe Val Leu Val  
 20 25 30  
 Ser Pro Phe Ile His Ser Leu Ser Thr Asn Tyr Asn Phe Leu Cys Phe  
 35 40 45  
 Met Cys Gly  
 50

<210> 2060  
 <211> 354  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 2060

Met Ala Pro Ala Lys Ala Thr Asn Val Val Arg Leu Leu Leu Gly Ser  
 1 5 10 15  
 Thr Ala Leu Trp Leu Ser Gln Leu Gly Ser Gly Thr Val Ala Ala Ser  
 20 25 30  
 Lys Ser Val Thr Ala His Leu Ala Ala Lys Trp Pro Glu Thr Pro Leu  
 35 40 45  
 Leu Leu Glu Ala Ser Glu Phe Met Ala Glu Glu Ser Asn Glu Lys Phe  
 50 55 60  
 Trp Gln Phe Leu Glu Thr Val Gln Glu Leu Ala Ile Tyr Lys Gln Thr  
 65 70 75 80  
 Glu Ser Asp Tyr Ser Tyr Tyr Asn Leu Ile Leu Lys Lys Ala Gly Gln  
 85 90 95  
 Phe Leu Asp Asn Leu His Ile Asn Leu Leu Lys Phe Ala Phe Ser Ile  
 100 105 110  
 Arg Ala Tyr Ser Pro Ala Ile Gln Met Phe Gln Gln Ile Ala Ala Asp  
 115 120 125  
 Glu Pro Pro Pro Asp Gly Cys Asn Ala Phe Val Val Ile His Lys Lys  
 130 135 140  
 His Thr Cys Lys Ile Asn Glu Ile Lys Lys Leu Leu Lys Lys Ala Ala  
 145 150 155 160  
 Ser Arg Thr Arg Pro Tyr Leu Phe Lys Gly Asp His Lys Phe Pro Thr  
 165 170 175  
 Asn Lys Glu Asn Leu Pro Val Val Ile Leu Tyr Ala Glu Met Gly Thr  
 180 185 190  
 Arg Thr Phe Ser Ala Phe His Lys Val Leu Ser Glu Lys Ala Gln Asn  
 195 200 205  
 Glu Glu Ile Leu Tyr Val Leu Arg His Tyr Ile Gln Lys Pro Ser Ser  
 210 215 220  
 Arg Lys Met Tyr Leu Ser Gly Tyr Gly Val Glu Leu Ala Ile Lys Ser  
 225 230 235 240  
 Thr Glu Tyr Lys Ala Leu Asp Asp Thr Gln Val Lys Thr Val Thr Asn  
 245 250 255  
 Thr Thr Val Glu Asp Glu Thr Glu Thr Asn Glu Val Gln Gly Phe Leu  
 260 265 270  
 Phe Gly Lys Leu Lys Glu Ile Tyr Ser Asp Leu Arg Asp Asn Leu Thr  
 275 280 285  
 Ala Phe Gln Lys Tyr Leu Ile Glu Ser Asn Lys Gln Met Met Pro Leu  
 290 295 300  
 Lys Val Trp Glu Leu Gln Asp Leu Ser Phe Gln Ala Ala Ser Gln Ile

1350

[illegible]

```
<210> 2061
<211> 157
<212> PRT
<213> Homo sapiens
```

```

<400> 2061
Met Gln Ala Pro Arg Ala Ala Leu Val Phe Ala Leu Val Ile Ala Leu
  1          5          10          15
Val Pro Val Gly Arg Gly Asn Tyr Glu Glu Leu Glu Asn Ser Gly Asp
          20          25          30
Thr Thr Val Glu Ser Glu Arg Pro Asn Lys Val Thr Ile Pro Ser Thr
          35          40          45
Phe Ala Ala Val Thr Ile Lys Glu Thr Leu Asn Ala Asn Ile Asn Ser
          50          55          60
Thr Asn Phe Ala Pro Asp Glu Asn Gln Leu Glu Phe Ile Leu Met Val
  65          70          75          80
Leu Ile Pro Leu Ile Leu Leu Val Leu Leu Leu Leu Ser Val Val Phe
          85          90          95
Leu Ala Thr Tyr Tyr Lys Arg Lys Arg Thr Lys Gln Glu Pro Ser Ser
          100          105          110
Gln Gly Ser Gln Ser Ala Leu Gln Thr Cys Glu Tyr Tyr Pro Lys Thr
          115          120          125
Cys Leu Gln Val Gly Val Gly Leu Glu Lys Glu Gln Arg Cys Phe Lys
          130          135          140
Ile Lys Gln Gln Gly Leu His Ile Ile Val Ser Asp Lys
          145          150          155

```

```
<210> 2062
<211> 67
<212> PRT
<213> Homo sapiens
```

```
<400> 2062
Met Val Leu Gly Phe Val Leu Leu Leu Phe Asn Met Gly Gly Thr Phe
  1             5             10             15
```

Ser Asp Gly Arg Lys Glu Arg Arg Arg Thr Thr Phe Leu Arg Cys Cys  
20 25 30

Asp Phe Ile Met Lys Pro Ser Pro Ala Leu Ile Leu Val Thr Ser Val  
35 40 45

Gly Pro Val Leu Leu Gln Asn Ala Ser Trp Val Ser Val Cys Arg Thr  
50 55 60

Leu Leu Ser  
65

```
<210> 2063
<211> 43
<212> PRT
<213> Homo sapiens
```

<400> 2063  
Met Tyr Phe Phe Phe Phe Leu Thr Phe Leu Ala Leu Trp Val Met Gly  
1 5 10 15

Thr Thr Ala Met Ala Ser Pro Phe Phe Met Gly Tyr Gln Leu Gln Tyr  
20 25 30

Gly Pro Gln Cys Cys Ser Gly His Phe Asn Asp  
35 40

```
<210> 2064
<211> 57
<212> PRT
<213> Homo sapiens
```

<400> 2064  
Met Cys Glu Gly Trp Leu His Pro Ile Phe Leu Tyr Cys Cys Phe Trp  
1 5 10 15

Thr Thr Thr Pro Ser Cys Ser Ala Phe Gly Ile Leu Asp Leu His Gln  
20 25 30

Gln His Pro Ile Pro Thr Pro Ser Ser Trp Phe Ser Gly Leu Cys Pro  
35 40 45

Trp Thr Glu Leu His His Cys Leu Arg  
50 55

```
<210> 2065
<211> 51
<212> PRT
<213> Homo sapiens
```

```
<400> 2065
Met Ile Ile Cys Leu Ile Met Phe Tyr Phe Ile Ala Leu Ala Gly Ala
  1             5             10             15
```

His Lys Arg Val Val Ile Gln Leu Arg Glu Gln Leu Ser Leu Glu Ser  
                   20                  25                  30

Arg Asp Lys Cys Tyr Leu Ile Gln Lys Leu Thr Glu Ala Gln Arg Asp  
           35                  40                  45

Met Arg Asn  
       50

<210> 2066  
 <211> 366  
 <212> PRT  
 <213> Homo sapiens

<400> 2066

Met Ala Cys Leu Lys Thr Gln Arg Ala Pro Lys Ala Phe Leu Leu Leu  
   1                  5                  10                  15

Pro Leu Leu Leu Tyr Phe Ala Gly Leu Ser Lys Leu Thr Gln Leu Gln  
                   20                  25                  30

Val Cys Ser Gly Thr Asp Glu Asp Pro Asp Asp Lys Asn Ala Pro Phe  
           35                  40                  45

Arg Gln Arg Pro Phe Cys Lys Tyr Lys Gly His Thr Ala Asp Leu Leu  
           50                  55                  60

Asp Leu Ser Trp Ser Lys Asn Tyr Phe Leu Leu Ser Ser Ser Met Asp  
   65                  70                  75                  80

Lys Thr Val Arg Leu Trp His Ile Ser Arg Arg Glu Cys Leu Cys Cys  
                   85                  90                  95

Phe Gln His Ile Asp Phe Val Thr Ala Ile Ala Phe His Pro Arg Asp  
           100                  105                  110

Asp Arg Tyr Phe Leu Ser Gly Ser Leu Asp Gly Lys Leu Arg Leu Trp  
           115                  120                  125

Asn Ile Pro Asp Lys Lys Val Ala Leu Trp Asn Glu Val Asp Gly Gln  
   130                  135                  140

Thr Lys Leu Ile Thr Ala Ala Asn Phe Cys Gln Asn Gly Lys Tyr Ala  
   145                  150                  155                  160

Val Ile Gly Thr Tyr Asp Gly Arg Cys Ile Phe Tyr Asp Thr Glu His  
           165                  170                  175

Leu Lys Tyr His Thr Gln Ile His Val Arg Ser Thr Arg Gly Arg Asn  
           180                  185                  190

Lys Val Gly Arg Lys Ile Thr Gly Ile Glu Pro Leu Pro Gly Glu Asn  
           195                  200                  205

Lys Ile Leu Val Thr Ser Asn Asp Ser Arg Ile Arg Leu Tyr Asp Leu  
   210                  215                  220

Arg Asp Leu Ser Leu Ser Met Lys Tyr Lys Gly Tyr Val Asn Ser Ser

225                      230                      235                      240  
 Ser Gln Ile Lys Ala Ser Phe Ser His Asp Phe Thr Tyr Leu Val Ser  
                                  245                      250                      255  
 Gly Ser Glu Asp Lys Tyr Val Tyr Ile Trp Ser Thr Tyr His Asp Leu  
                                  260                      265                      270  
 Ser Lys Phe Thr Ser Val Arg Arg Asp Arg Asn Asp Phe Trp Glu Gly  
                                  275                      280                      285  
 Ile Lys Ala His Asn Ala Val Val Thr Ser Ala Ile Phe Ala Pro Asn  
                                  290                      295                      300  
 Pro Ser Leu Met Leu Ser Leu Asp Val Gln Ser Glu Lys Ser Glu Gly  
 305                      310                      315                      320  
 Asn Glu Lys Ser Glu Asp Ala Glu Val Leu Asp Ala Thr Pro Ser Gly  
                                  325                      330                      335  
 Ile Met Lys Thr Asp Asn Thr Glu Val Leu Leu Ser Ala Asp Phe Thr  
                                  340                      345                      350  
 Gly Ala Ile Lys Val Phe Val Asn Lys Arg Lys Asn Val Ser  
                                  355                      360                      365

&lt;210&gt; 2067

&lt;211&gt; 187

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2067

Met Val Ala Ala Thr Val Ala Ala Ala Trp Leu Leu Leu Trp Ala Ala  
   1                                  5                                  10                                  15  
 Ala Cys Ala Gln Gln Glu Gln Asp Phe Tyr Asp Phe Lys Ala Val Asn  
                                   20                                  25                                  30  
 Ile Arg Gly Lys Leu Val Ser Leu Glu Lys Tyr Arg Gly Ser Val Ser  
                                   35                                  40                                  45  
 Leu Val Val Asn Val Ala Ser Glu Cys Gly Phe Thr Asp Gln His Tyr  
                                   50                                  55                                  60  
 Arg Ala Leu Gln Gln Leu Gln Arg Asp Leu Gly Pro His His Phe Asn  
   65                                  70                                  75                                  80  
 Val Leu Ala Phe Pro Cys Asn Gln Phe Gly Gln Gln Glu Pro Asp Ser  
                                   85                                  90                                  95  
 Asn Lys Glu Ile Glu Ser Phe Ala Arg Arg Thr Tyr Ser Val Ser Phe  
                                   100                                  105                                  110  
 Pro Met Phe Ser Lys Ile Ala Val Thr Gly Thr Gly Ala His Pro Ala  
                                   115                                  120                                  125  
 Phe Lys Tyr Leu Ala Gln Thr Ser Gly Lys Glu Pro Thr Trp Asn Phe  
                                   130                                  135                                  140



Trp Lys Tyr Leu Val Ala Pro Asp Gly Lys Val Val Gly Ala Trp Asp  
145 150 155 160

Pro Thr Val Ser Val Glu Glu Val Arg Pro Gln Ile Thr Ala Leu Val  
165 170 175

Arg Lys Leu Ile Leu Leu Lys Arg Glu Asp Leu  
180 185

<210> 2068

<211> 346

<212> PRT

<213> Homo sapiens

<400> 2068

Met Asp Pro Ala Arg Lys Ala Gly Ala Gln Ala Met Ile Trp Thr Ala  
1 5 10 15

Gly Trp Leu Leu Leu Leu Leu Leu Arg Gly Gly Ala Gln Ala Leu Glu  
20 25 30

Cys Tyr Ser Cys Val Gln Lys Ala Asp Asp Gly Cys Ser Pro Asn Lys  
35 40 45

Met Lys Thr Val Lys Cys Ala Pro Gly Val Asp Val Cys Thr Glu Ala  
50 55 60

Val Gly Ala Val Glu Thr Ile His Gly Gln Phe Ser Leu Ala Val Arg  
65 70 75 80

Gly Cys Gly Ser Gly Leu Pro Gly Lys Asn Asp Arg Gly Leu Asp Leu  
85 90 95

His Gly Leu Leu Ala Phe Ile Gln Leu Gln Gln Cys Ala Gln Asp Arg  
100 105 110

Cys Asn Ala Lys Leu Asn Leu Thr Ser Arg Ala Leu Asp Pro Ala Gly  
115 120 125

Asn Glu Ser Ala Tyr Pro Pro Asn Gly Val Glu Cys Tyr Ser Cys Val  
130 135 140

Gly Leu Ser Arg Glu Ala Cys Gln Gly Thr Ser Pro Pro Val Val Ser  
145 150 155 160

Cys Tyr Asn Ala Ser Asp His Val Tyr Lys Gly Cys Phe Asp Gly Asn  
165 170 175

Val Thr Leu Thr Ala Ala Asn Val Thr Val Ser Leu Pro Val Arg Gly  
180 185 190

Cys Val Gln Asp Glu Phe Cys Thr Arg Asp Gly Val Thr Gly Pro Gly  
195 200 205

Phe Thr Leu Ser Gly Ser Cys Cys Gln Gly Ser Arg Cys Asn Ser Asp  
210 215 220

Leu Arg Asn Lys Thr Tyr Phe Ser Pro Arg Ile Pro Pro Leu Val Arg  
 225 230 235 240  
 Leu Pro Pro Pro Glu Pro Thr Thr Val Ala Ser Thr Thr Ser Val Thr  
 245 250 255  
 Thr Ser Thr Ser Ala Pro Val Arg Pro Thr Ser Thr Thr Lys Pro Met  
 260 265 270  
 Pro Ala Pro Thr Ser Gln Thr Pro Arg Gln Gly Val Glu His Glu Ala  
 275 280 285  
 Ser Arg Asp Glu Glu Pro Arg Leu Thr Gly Gly Ala Ala Gly His Gln  
 290 295 300  
 Asp Arg Ser Asn Ser Gly Gln Tyr Pro Ala Lys Gly Gly Pro Gln Gln  
 305 310 315 320  
 Pro His Asn Lys Gly Cys Val Ala Pro Thr Ala Gly Leu Ala Ala Leu  
 325 330 335  
 Leu Leu Ala Val Ala Ala Gly Val Leu Leu  
 340 345

<210> 2069  
 <211> 47  
 <212> PRT  
 <213> Homo sapiens

<400> 2069  
 Met Arg Leu Ser Arg Ala Ala His Asn Leu Gln Thr Ile Leu Tyr Ser  
 1 5 10 15  
 Val Phe Cys Leu Cys Leu His Val Ala Met Met Asp Arg Ser Pro Ser  
 20 25 30  
 Ser Ile Leu Ala Leu Trp Arg Ser Gly Ser Cys Ser Val Glu Ile  
 35 40 45

<210> 2070  
 <211> 102  
 <212> PRT  
 <213> Homo sapiens

<400> 2070  
 Met Leu Leu His Trp Leu Leu Gln Asn Glu Leu Gln Ser Ala Val Ala  
 1 5 10 15  
 Ser Cys Leu Val Ser Ile Ser Leu Gly Lys Glu Asp Phe Leu Gln Thr  
 20 25 30  
 Gly Cys Lys Val Lys Ser His Val Gly Val Ile His Arg Arg Glu Lys  
 35 40 45  
 Gly Gly Ala Ile Tyr Leu Pro Asn Ser Leu Val Leu Pro Thr Ser His  
 50 55 60

Trp Ile Arg Leu Ser Tyr Arg Asn Arg His Arg Gly Phe Ile Leu Trp  
65 70 75 80

Thr Leu Met Ser Thr Trp Glu Ala Arg Cys His Gly Pro Cys Val Met  
85 90 95

Phe Asp Phe Asn Gln Lys  
100

<210> 2071

<211> 144

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (138)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2071

Met Val Thr Leu Ala Glu Leu Leu Val Leu Leu Ala Ala Leu Leu Ala  
1 5 10 15

Thr Val Ser Gly Tyr Phe Val Ser Ile Asp Ala His Ala Glu Glu Cys  
20 25 30

Phe Phe Glu Arg Val Thr Ser Gly Thr Lys Met Gly Leu Ile Phe Glu  
35 40 45

Val Ala Glu Gly Gly Phe Leu Asp Ile Asp Val Glu Val Arg Ala Ser  
50 55 60

Cys Pro Gln Leu Arg Leu Gly Arg Val Ala Thr Arg Gly Leu Val Ala  
65 70 75 80

Pro Gly Thr Gly Ala Gly Pro Val Trp Gly Val Gly Leu Glu Val Ala  
85 90 95

Val Arg Val Leu Glu Lys Pro Arg Pro Pro Pro Pro Ala Pro Pro Arg  
100 105 110

Pro Arg Arg Pro Pro Asn Gly Pro Phe Ser Arg Asp Leu Pro Gly Phe  
115 120 125

Arg Asp Pro Leu Gly Ala Pro Ser Ala Xaa Leu Val Ala Leu Gly Phe  
130 135 140

<210> 2072

<211> 12

<212> PRT

<213> Homo sapiens

&lt;400&gt; 2072

Met Gly Ser Ser Leu Ala Phe Ile Leu Phe Leu Pro  
 1 5 10

&lt;210&gt; 2073

&lt;211&gt; 201

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2073

Met Val Thr Leu Ala Glu Leu Leu Val Leu Leu Ala Ala Leu Leu Ala  
 1 5 10 15

Thr Val Ser Gly Tyr Phe Val Ser Ile Asp Ala His Ala Glu Glu Cys  
 20 25 30

Phe Phe Glu Arg Val Thr Ser Gly Thr Lys Met Gly Leu Ile Phe Glu  
 35 40 45

Val Ala Glu Gly Gly Phe Leu Asp Ile Asp Val Glu Ile Thr Gly Pro  
 50 55 60

Asp Asn Lys Gly Ile Tyr Lys Gly Asp Arg Glu Ser Ser Gly Lys Tyr  
 65 70 75 80

Thr Phe Ala Ala His Met Asp Gly Thr Tyr Lys Phe Cys Phe Ser Asn  
 85 90 95

Arg Met Ser Thr Met Thr Pro Lys Ile Val Met Phe Thr Ile Asp Ile  
 100 105 110

Gly Glu Ala Pro Lys Gly Gln Asp Met Glu Thr Glu Ala His Gln Asn  
 115 120 125

Lys Leu Glu Glu Met Ile Asn Glu Leu Ala Val Ala Met Thr Ala Val  
 130 135 140

Lys His Glu Gln Glu Tyr Met Glu Val Arg Glu Arg Ile His Arg Ala  
 145 150 155 160

Ile Asn Asp Asn Thr Asn Ser Arg Val Val Leu Trp Ser Phe Phe Glu  
 165 170 175

Ala Leu Val Leu Val Ala Met Thr Leu Gly Gln Ile Tyr Tyr Leu Lys  
 180 185 190

Arg Phe Phe Glu Val Arg Arg Val Val  
 195 200

&lt;210&gt; 2074

&lt;211&gt; 45

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2074

Met Leu Ser Ala Ser Ile Trp Leu Val Leu Ile Ile Ser Arg Gly Asn

1 5 10 15  
 Ala Arg Gln Lys Val Lys Leu Cys Phe Leu Leu Met Leu Leu Ala Thr  
                   20                  25                  30  
 Trp Lys Arg Arg Arg Gly Arg Gly Lys Arg Gly Arg Ser  
           35                  40                  45

<210> 2075  
 <211> 201  
 <212> PRT  
 <213> Homo sapiens

<400> 2075  
 Met Val Thr Leu Ala Glu Leu Leu Val Leu Leu Ala Ala Leu Leu Ala  
   1                  5                  10                  15  
 Thr Val Ser Gly Tyr Phe Val Ser Ile Asp Ala His Ala Glu Glu Cys  
           20                  25                  30  
 Phe Phe Glu Arg Val Thr Ser Gly Thr Lys Met Gly Leu Ile Phe Glu  
           35                  40                  45  
 Val Ala Glu Gly Gly Phe Leu Asp Ile Asp Val Glu Ile Thr Gly Pro  
   50                  55                  60  
 Asp Asn Lys Gly Ile Tyr Lys Gly Asp Arg Glu Ser Ser Gly Lys Tyr  
   65                  70                  75                  80  
 Thr Phe Ala Ala His Met Asp Gly Thr Tyr Lys Phe Cys Phe Ser Asn  
                   85                  90                  95  
 Arg Met Ser Thr Met Thr Pro Lys Ile Val Met Phe Thr Ile Asp Ile  
           100                  105                  110  
 Gly Glu Ala Pro Lys Gly Gln Asp Met Glu Thr Glu Ala His Gln Asn  
   115                  120                  125  
 Lys Leu Glu Glu Met Ile Asn Glu Leu Ala Val Ala Met Thr Ala Val  
   130                  135                  140  
 Lys His Glu Gln Glu Tyr Met Glu Val Arg Glu Arg Ile His Arg Ala  
   145                  150                  155                  160  
 Ile Asn Asp Asn Thr Asn Ser Arg Val Val Leu Trp Ser Phe Phe Glu  
           165                  170                  175  
 Ala Leu Val Leu Val Ala Met Thr Leu Gly Gln Ile Tyr Tyr Leu Lys  
           180                  185                  190  
 Arg Phe Phe Glu Val Arg Arg Val Val  
   195                  200

<210> 2076  
 <211> 201  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2076

Met Val Thr Leu Ala Glu Leu Leu Val Leu Leu Ala Ala Leu Leu Ala  
 1 5 10 15

Thr Val Ser Gly Tyr Phe Val Ser Ile Asp Ala His Ala Glu Glu Cys  
 20 25 30

Phe Phe Glu Arg Val Thr Ser Gly Thr Lys Met Gly Leu Ile Phe Glu  
 35 40 45

Val Ala Glu Gly Gly Phe Leu Asp Ile Asp Val Glu Ile Thr Gly Pro  
 50 55 60

Asp Asn Lys Gly Ile Tyr Lys Gly Asp Arg Glu Ser Ser Gly Lys Tyr  
 65 70 75 80

Thr Phe Ala Ala His Met Asp Gly Thr Tyr Lys Phe Cys Phe Ser Asn  
 85 90 95

Arg Met Ser Thr Met Thr Pro Lys Ile Val Met Phe Thr Ile Asp Ile  
 100 105 110

Gly Glu Ala Pro Lys Gly Gln Asp Met Glu Thr Glu Ala His Gln Asn  
 115 120 125

Lys Leu Glu Glu Met Ile Asn Glu Leu Ala Val Ala Met Thr Ala Val  
 130 135 140

Lys His Glu Gln Glu Tyr Met Glu Val Arg Glu Arg Ile His Arg Ala  
 145 150 155 160

Ile Asn Asp Asn Thr Asn Ser Arg Val Val Leu Trp Ser Phe Phe Glu  
 165 170 175

Ala Leu Val Leu Val Ala Met Thr Leu Gly Gln Ile Tyr Tyr Leu Lys  
 180 185 190

Arg Phe Phe Glu Val Arg Arg Val Val  
 195 200

&lt;210&gt; 2077

&lt;211&gt; 587

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2077

Met Trp Arg Leu Gly Cys Leu Ile Trp Glu Val Phe Asn Gly Pro Leu  
 1 5 10 15

Pro Arg Ala Ala Ala Leu Arg Asn Pro Gly Lys Ile Pro Lys Thr Leu  
 20 25 30

Val Pro His Tyr Cys Glu Leu Val Gly Ala Asn Pro Lys Val Arg Pro  
 35 40 45

Asn Pro Ala Arg Phe Leu Gln Asn Cys Arg Ala Pro Gly Gly Phe Met

50					55					60					
Ser 65	Asn	Arg	Phe	Val	Glu 70	Thr	Asn	Leu	Phe	Leu 75	Glu	Glu	Ile	Gln	Ile 80
Lys	Glu	Pro	Ala	Glu 85	Lys	Gln	Lys	Phe	Phe 90	Gln	Glu	Leu	Ser	Lys 95	Ser
Leu	Asp	Ala	Phe 100	Pro	Glu	Asp	Phe	Cys 105	Arg	His	Lys	Val	Leu 110	Pro	Gln
Leu	Leu	Thr 115	Ala	Phe	Glu	Phe	Gly 120	Asn	Ala	Gly	Ala	Val 125	Val	Leu	Thr
Pro 130	Leu	Phe	Lys	Val	Gly 135	Lys	Phe	Leu	Ser	Ala	Glu 140	Glu	Tyr	Gln	Gln
Lys 145	Ile	Ile	Pro	Val 150	Val	Val	Lys	Met	Phe	Ser 155	Ser	Thr	Asp	Arg	Ala 160
Met	Arg	Ile	Arg	Leu 165	Leu	Gln	Gln	Met	Glu 170	Gln	Phe	Ile	Gln	Tyr 175	Leu
Asp	Glu	Pro	Thr 180	Val	Asn	Thr	Gln 185	Ile	Phe	Pro	His	Val 190	Val	His	Gly
Phe	Leu	Asp 195	Thr	Asn	Pro	Ala	Ile 200	Arg	Glu	Gln	Thr	Val 205	Lys	Ser	Met
Leu 210	Leu	Leu	Ala	Pro	Lys	Leu 215	Asn	Glu	Ala	Asn	Leu 220	Asn	Val	Glu	Leu
Met 225	Lys	His	Phe	Ala 230	Arg	Leu	Gln	Ala	Lys	Asp 235	Glu	Gln	Gly	Pro 240	Ile
Arg	Cys	Asn	Thr	Thr 245	Val	Cys	Leu	Gly	Lys 250	Ile	Gly	Ser	Tyr	Leu 255	Ser
Ala	Ser	Thr 260	Arg	His	Arg	Val	Leu 265	Thr	Ser	Ala	Phe	Ser	Arg 270	Ala	Thr
Arg	Asp	Pro 275	Phe	Ala	Pro	Ser	Arg 280	Val	Ala	Gly	Val	Leu 285	Gly	Phe	Ala
Ala 290	Thr	His	Asn	Leu	Tyr	Ser 295	Met	Asn	Asp	Cys	Ala 300	Gln	Lys	Ile	Leu
Pro 305	Val	Leu	Cys	Gly 310	Leu	Thr	Val	Asp	Pro	Glu 315	Lys	Ser	Val	Arg	Asp 320
Gln	Ala	Phe	Lys	Ala 325	Ile	Arg	Ser	Phe	Leu 330	Ser	Lys	Leu	Glu	Ser 335	Val
Ser	Glu	Asp	Pro 340	Thr	Gln	Leu	Glu	Glu 345	Val	Glu	Lys	Asp	Val 350	His	Ala
Ala	Ser	Ser 355	Pro	Gly	Met	Gly 360	Gly	Ala	Ala	Ala	Ser	Trp 365	Ala	Gly	Trp
Ala	Val	Thr	Gly	Val	Ser	Ser	Leu	Thr	Ser	Lys	Leu	Ile	Arg	Ser	His

370                      375                      380  
 Pro Thr Thr Ala Pro Thr Glu Thr Asn Ile Pro Gln Arg Pro Thr Pro  
 385                      390                      395                      400  
 Glu Gly His Trp Glu Thr Gln Glu Glu Asp Lys Asp Thr Ala Glu Asp  
                     405                      410                      415  
 Ser Ser Thr Ala Asp Arg Trp Asp Asp Glu Asp Trp Gly Ser Leu Glu  
                     420                      425                      430  
 Gln Glu Ala Glu Ser Val Leu Ala Gln Gln Asp Asp Trp Ser Thr Gly  
                     435                      440                      445  
 Gly Gln Val Ser Arg Ala Ser Gln Val Ser Asn Ser Asp His Lys Ser  
                     450                      455                      460  
 Ser Lys Ser Pro Glu Ser Asp Trp Ser Ser Trp Glu Ala Glu Gly Ser  
 465                      470                      475                      480  
 Trp Glu Gln Gly Trp Gln Glu Pro Ser Ser Gln Glu Pro Pro Pro Asp  
                     485                      490                      495  
 Gly Thr Arg Leu Ala Ser Glu Tyr Asn Trp Gly Gly Pro Glu Ser Ser  
                     500                      505                      510  
 Asp Lys Gly Asp Pro Phe Ala Thr Leu Ser Ala Arg Pro Ser Thr Gln  
                     515                      520                      525  
 Pro Arg Pro Asp Ser Trp Gly Glu Asp Asn Trp Glu Gly Leu Glu Thr  
                     530                      535                      540  
 Asp Ser Arg Gln Val Lys Ala Glu Leu Ala Arg Lys Lys Arg Glu Glu  
 545                      550                      555                      560  
 Arg Arg Arg Glu Met Glu Ala Lys Arg Ala Glu Arg Lys Val Ala Lys  
                     565                      570                      575  
 Gly Pro Met Lys Leu Gly Ala Arg Lys Leu Asp  
                     580                      585

&lt;210&gt; 2078

&lt;211&gt; 124

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2078

Met Arg Gln Val Ala Pro Ala Arg Arg Ala Gln Leu Glu His Ser Gly  
   1                    5                    10                    15  
 Leu His Ala Ser Leu Cys Leu Leu Ser Leu Leu Ser Leu Leu Pro Thr  
                     20                    25                    30  
 Leu Glu Ala Asn Met Ser Gly Phe His Gln Ala Pro Leu Thr Leu Leu  
                     35                    40                    45  
 Pro Ser Cys Thr Gln Gly Asp Gly Glu Ala Arg Gly His His Thr Gln  
                     50                    55                    60



Pro Ser Phe Trp Arg Thr Glu Met Lys Cys Pro Val Glu Ala Leu Leu  
 65 70 75 80  
 Glu His Leu Ala Thr Arg Ala Val Val Gly Arg Asn Gly Asp His Gly  
 85 90 95  
 Ala Gln Gln Glu His Arg Thr Ala Ser Glu Gly Gln Gln Gln Pro Leu  
 100 105 110  
 Ala Glu Ser Ser Pro Trp Trp Gln Pro Pro His Gly  
 115 120

&lt;210&gt; 2079

&lt;211&gt; 74

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2079

Met Ala Leu Phe Ala Trp Leu Cys Leu Ser Ala Val Val Glu Ser Ser  
 1 5 10 15  
 Ser Pro Gly Met Cys Met Ser Lys Cys Val Leu Ile Val Met Pro Arg  
 20 25 30  
 Gln Lys Pro Leu Glu Asp Cys Cys Arg His Ala Leu Lys Met Thr Ser  
 35 40 45  
 His Ser Ser Glu Lys Leu Gly Asp Leu Thr Pro Glu Gly Leu Lys Ser  
 50 55 60  
 Glu Lys Ser Gln Glu His Leu Gly Phe Lys  
 65 70

&lt;210&gt; 2080

&lt;211&gt; 76

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2080

Met Val Val Asp Leu Phe Phe Tyr Leu Leu Cys Ile Phe Leu Val Leu  
 1 5 10 15  
 Trp Val Leu Glu Ala Met Ile Lys His Leu Met Tyr Ser Asp Met Ser  
 20 25 30  
 Ala Leu Ile Ala Ser Phe Ser Ser Phe Leu Asn Cys Ile His Tyr Phe  
 35 40 45  
 Gln Asn Arg Tyr Arg Tyr Ser Val Pro Pro Phe Glu Leu Leu Ala Cys  
 50 55 60  
 Ser Cys Phe Pro Leu Ser Pro Lys Gln Gly Phe Phe  
 65 70 75

<210> 2081  
 <211> 146  
 <212> PRT  
 <213> Homo sapiens

<400> 2081  
 Met Ala Ala Leu Leu Leu Leu Pro Leu Leu Leu Leu Leu Pro Leu Leu  
           1                  5                  10                  15  
 Leu Leu Lys Leu His Leu Trp Pro Gln Leu Arg Trp Leu Pro Ala Ala  
                   20                  25                  30  
 Thr Ala Ala Arg Gly Ala Leu Glu Lys Ala Ser Gly Gln Arg Arg Glu  
           35                  40                  45  
 Pro Glu Met Gln Arg Pro Glu Ala Ala Arg Ser Leu Pro Glu Gly Thr  
           50                  55                  60  
 Val Pro Pro Glu Val Glu Glu Pro Pro Pro Leu Cys His Leu Glu Gln  
           65                  70                  75                  80  
 Leu Trp Arg Cys Ser Ser Pro Leu Ala Gln Ser Phe Cys Gly Ser Gly  
                   85                  90                  95  
 Ser Gly Trp Pro Arg Pro Ala Cys Ala Leu Pro Leu Cys Pro Pro Pro  
           100                  105                  110  
 Cys Ala Gly Ala Pro Cys Cys Thr Ala Ser Ala Ala Ala Ala Arg Ala  
           115                  120                  125  
 Arg Trp Cys Trp Arg Gln Ser Phe Trp Ser Pro Trp Ser Arg Thr Cys  
           130                  135                  140  
 Pro Pro  
 145

<210> 2082  
 <211> 30  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (28)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2082  
 Met Arg Leu Phe Ser Gln Met Leu Lys Ser Trp Met Ala Leu Phe Met  
           1                  5                  10                  15  
 Arg Asn Val Trp Leu Glu Met Thr Ile Ala Thr Xaa Ile Gln  
                   20                  25                  30

<210> 2083  
 <211> 56

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2083

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Met Arg Leu Phe Ser Gln Met Leu Lys Ser Trp Met Ala Leu Phe Met
 1              5              10              15
Arg Asn Val Trp Leu Glu Met Thr Ile Ala Thr Ala His Thr Val Ser
              20              25              30
Thr Val His Trp Arg Lys Trp Thr Lys Met Leu Val Gln Ser Pro Thr
              35              40              45
Gln Val Lys Met Asn Val Ser Gln
 50              55

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&lt;210&gt; 2084

&lt;211&gt; 563

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2084

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Met Gly Ser Leu Ser Asn Tyr Ala Leu Leu Gln Leu Thr Leu Thr Ala
 1              5              10              15
Phe Leu Thr Ile Leu Val Gln Pro Gln His Leu Leu Ala Pro Val Phe
              20              25              30
Arg Thr Leu Ser Ile Leu Thr Asn Gln Ser Asn Cys Trp Leu Cys Glu
              35              40              45
His Leu Asp Asn Ala Glu Gln Pro Glu Leu Val Phe Val Pro Ala Ser
              50              55              60
Ala Ser Thr Trp Trp Thr Tyr Ser Gly Gln Trp Met Tyr Glu Arg Val
              65              70              75              80
Trp Tyr Pro Gln Ala Glu Val Gln Asn His Ser Thr Ser Ser Tyr Arg
              85              90              95
Lys Val Thr Trp His Trp Glu Ala Ser Met Glu Ala Gln Gly Leu Ser
              100              105              110
Phe Ala Gln Val Arg Leu Leu Glu Gly Asn Phe Ser Leu Cys Val Glu
              115              120              125
Asn Lys Asn Gly Ser Gly Pro Phe Leu Gly Asn Ile Pro Lys Gln Tyr
              130              135              140
Cys Asn Gln Ile Leu Trp Phe Asp Ser Thr Asp Gly Thr Phe Met Pro
              145              150              155              160
Ser Ile Asp Val Thr Asn Glu Ser Arg Asn Asp Asp Asp Asp Pro Ser
              165              170              175
Val Cys Leu Gly Thr Arg Gln Cys Ser Trp Phe Ala Gly Cys Thr Asn
              180              185              190

```

Arg Thr Trp Asn Ser Ser Ala Val Pro Leu Ile Gly Leu Pro Asn Thr  
 195 200 205  
 Gln Asp Tyr Lys Trp Val Asp Arg Asn Ser Gly Leu Thr Trp Ser Gly  
 210 215 220  
 Asn Asp Thr Cys Leu Tyr Ser Cys Gln Asn Gln Thr Lys Gly Leu Leu  
 225 230 235 240  
 Tyr Gln Leu Phe Arg Asn Leu Phe Cys Ser Tyr Gly Leu Thr Glu Ala  
 245 250 255  
 His Gly Lys Trp Arg Cys Ala Asp Ala Ser Ile Thr Asn Asp Lys Gly  
 260 265 270  
 His Asp Gly His Arg Thr Pro Thr Trp Trp Leu Thr Gly Ser Asn Leu  
 275 280 285  
 Thr Leu Ser Val Asn Asn Ser Gly Leu Phe Phe Leu Cys Gly Asn Gly  
 290 295 300  
 Val Tyr Lys Gly Phe Pro Pro Lys Trp Ser Gly Arg Cys Gly Leu Gly  
 305 310 315 320  
 Tyr Leu Val Pro Ser Leu Thr Arg Tyr Leu Thr Leu Asn Ala Ser Gln  
 325 330 335  
 Ile Thr Asn Leu Arg Ser Phe Ile His Lys Val Thr Pro His Arg Cys  
 340 345 350  
 Thr Gln Gly Asp Thr Asp Asn Pro Pro Leu Tyr Cys Asn Pro Lys Asp  
 355 360 365  
 Asn Ser Thr Ile Arg Ala Leu Phe Pro Ser Leu Gly Thr Tyr Asp Leu  
 370 375 380  
 Glu Lys Ala Ile Leu Asn Ile Ser Lys Ala Met Glu Gln Glu Phe Ser  
 385 390 395 400  
 Ala Thr Lys Gln Thr Leu Glu Ala His Gln Ser Lys Val Ser Ser Leu  
 405 410 415  
 Ala Ser Ala Ser Arg Lys Asp His Val Leu Asp Ile Pro Thr Thr Gln  
 420 425 430  
 Arg Gln Thr Ala Cys Gly Thr Val Gly Lys Gln Cys Cys Leu Tyr Ile  
 435 440 445  
 Asn Tyr Ser Glu Glu Ile Lys Ser Asn Ile Gln Arg Leu His Glu Ala  
 450 455 460  
 Ser Glu Asn Leu Lys Asn Val Pro Leu Leu Asp Trp Gln Gly Ile Phe  
 465 470 475 480  
 Ala Lys Val Gly Asp Trp Phe Arg Ser Trp Gly Tyr Val Leu Leu Ile  
 485 490 495  
 Val Leu Phe Cys Leu Phe Ile Phe Val Leu Ile Tyr Val Arg Val Phe  
 500 505 510

Arg Lys Ser Arg Arg Ser Leu Asn Ser Gln Pro Leu Asn Leu Ala Leu  
                   515                                  520                                  525

Ser Pro Gln Gln Ser Ala Gln Leu Leu Val Ser Glu Thr Ser Cys Gln  
                   530                                  535                                  540

Val Ser Asn Arg Ala Met Lys Gly Leu Thr Thr His Gln Tyr Asp Thr  
   545                                  550                                  555                                  560

Ser Leu Leu

<210> 2085  
 <211> 599  
 <212> PRT  
 <213> Homo sapiens

<400> 2085  
 Met Glu Leu Leu Gly Pro Val Pro Pro Glu Gln Gln Phe Ile Asn Gln  
   1                                  5                                  10                                  15

Lys Met Arg Pro Gly Ser Gly Met Leu Ser Ile Arg Val Ile Pro Asp  
                   20                                  25                                  30

Gly Pro Thr Arg Ala Leu Gln Ile Thr Asp Phe Cys His Arg Lys Ser  
                   35                                  40                                  45

Ser Arg Ser Tyr Glu Val Asp Glu Leu Pro Val Thr Glu Gln Glu Leu  
   50                                  55                                  60

Gln Lys Leu Lys Asn Pro Asp Thr Glu Gln Glu Leu Glu Val Leu Val  
   65                                  70                                  75                                  80

Arg Leu Glu Gly Gly Ile Gly Leu Ser Leu Ile Asn Lys Val Pro Glu  
                                   85                                  90                                  95

Glu Leu Val Phe Ala Ser Leu Thr Gly Ile Asn Val His Tyr Thr Gln  
                   100                                  105                                  110

Leu Ala Thr Ser His Met Leu Glu Leu Ser Ile Gln Asp Val Gln Val  
                   115                                  120                                  125

Asp Asn Gln Leu Ile Gly Thr Thr Gln Pro Phe Met Leu Tyr Val Thr  
   130                                  135                                  140

Pro Leu Ser Asn Glu Asn Glu Val Ile Glu Thr Gly Pro Ala Val Gln  
  145                                  150                                  155                                  160

Val Asn Ala Val Lys Phe Pro Ser Lys Ser Ala Leu Thr Asn Ile Tyr  
                   165                                  170                                  175

Lys His Leu Met Ile Thr Ala Gln Arg Phe Thr Val Gln Ile Glu Glu  
                   180                                  185                                  190

Lys Leu Leu Leu Lys Leu Leu Ser Phe Phe Gly Tyr Asp Gln Ala Glu  
  195                                  200                                  205

Ser Glu Val Glu Lys Tyr Asp Glu Asn Leu His Glu Lys Thr Ala Glu

210		215		220	
Gln Gly Gly Thr Pro Ile Arg Tyr Tyr Phe Glu Asn Leu Lys Ile Ser					
225		230		235	240
Ile Pro Gln Ile Lys Leu Ser Val Phe Thr Ser Asn Lys Leu Pro Leu					
	245		250		255
Asp Leu Lys Ala Leu Lys Ser Thr Leu Gly Phe Pro Leu Ile Arg Phe					
	260		265		270
Glu Asp Ala Val Ile Asn Leu Asp Pro Phe Thr Arg Val His Pro Tyr					
	275		280		285
Glu Thr Lys Glu Phe Ile Ile Asn Asp Ile Leu Lys His Phe Gln Glu					
	290		295		300
Glu Leu Leu Ser Gln Ala Ala Arg Ile Leu Gly Ser Val Asp Phe Leu					
	305	310		315	320
Gly Asn Pro Met Gly Leu Leu Asn Asp Val Ser Glu Gly Val Thr Gly					
	325		330		335
Leu Ile Lys Tyr Gly Asn Val Gly Gly Leu Ile Arg Asn Val Thr His					
	340		345		350
Gly Val Ser Asn Ser Ala Gly Lys Phe Ala Gly Thr Leu Ser Asp Gly					
	355		360		365
Leu Gly Lys Thr Met Asp Asn Arg His Gln Ser Glu Arg Glu Tyr Ile					
	370		375		380
Arg Tyr His Ala Ala Thr Ser Gly Glu His Leu Val Ala Gly Ile His					
	385	390		395	400
Gly Leu Ala His Gly Ile Ile Gly Gly Leu Thr Ser Val Ile Thr Ser					
	405		410		415
Thr Val Glu Gly Val Lys Thr Glu Gly Gly Val Ser Gly Phe Ile Ser					
	420		425		430
Gly Leu Gly Lys Gly Leu Val Gly Thr Val Thr Lys Pro Val Ala Gly					
	435		440		445
Ala Leu Asp Phe Ala Ser Glu Thr Ala Gln Ala Val Arg Asp Thr Ala					
	450		455		460
Thr Leu Ser Gly Pro Arg Thr Gln Ala Gln Arg Val Arg Lys Pro Arg					
	465	470		475	480
Cys Cys Thr Gly Pro Gln Gly Leu Leu Pro Arg Tyr Ser Glu Ser Gln					
	485		490		495
Ala Glu Gly Gln Glu Gln Leu Phe Lys Leu Thr Asp Asn Ile Gln Asp					
	500		505		510
Glu Phe Phe Ile Ala Val Glu Asn Ile Asp Ser Tyr Cys Val Leu Ile					
	515		520		525
Ser Ser Lys Ala Val Tyr Phe Leu Lys Ser Gly Asp Tyr Val Asp Arg					

530                      535                      540  
 Glu Ala Ile Phe Leu Glu Val Lys Tyr Asp Asp Leu Leu Pro Leu Pro  
 545                      550                      555                      560  
 Cys Leu Gln Arg Pro Trp Glu Gly Val Cys Ala Gly Asp Gln Glu Ser  
                     565                      570                      575  
 Arg Glu His Glu Gln Trp Ser Val His Pro Arg Pro Leu Pro Pro Glu  
                     580                      585                      590  
 Ala His Gly Pro Cys Glu Ile  
                     595

<210> 2086  
 <211> 239  
 <212> PRT  
 <213> Homo sapiens

<400> 2086  
 Met Ala Pro Leu Leu Pro Ser Leu Pro Leu His Leu His Thr Ser Leu  
   1                      5                      10                      15  
 Cys Leu Arg Leu Cys Leu Ser Leu Ser Leu Ser Ala Trp Leu Ser Trp  
                     20                      25                      30  
 Ser Leu Pro Leu Cys Val Ser Leu Ser Ala Ser Tyr Pro Ala Trp Arg  
                     35                      40                      45  
 Leu Leu Pro Gln Leu His Gly Arg Ser Arg Glu Gln Arg Tyr Thr Lys  
                     50                      55                      60  
 Leu Ala Asp Trp Gln Tyr Ile Glu Glu Cys Val Gln Ala Ala Ser Pro  
   65                      70                      75                      80  
 Met Pro Leu Phe Gly Asn Gly Asp Ile Leu Ser Phe Glu Asp Ala Asn  
                     85                      90                      95  
 Arg Ala Met Gln Thr Gly Val Thr Gly Ile Met Ile Ala Arg Gly Ala  
                     100                      105                      110  
 Leu Leu Lys Pro Trp Leu Phe Thr Glu Ile Lys Glu Gln Arg His Trp  
                     115                      120                      125  
 Asp Ile Ser Ser Ser Glu Arg Leu Asp Ile Leu Arg Asp Phe Thr Asn  
   130                      135                      140  
 Tyr Gly Leu Glu His Trp Gly Ser Asp Thr Gln Gly Val Glu Lys Thr  
   145                      150                      155                      160  
 Arg Arg Phe Leu Leu Glu Trp Leu Ser Phe Leu Cys Arg Tyr Val Pro  
                     165                      170                      175  
 Val Gly Leu Leu Glu Arg Leu Pro Gln Arg Ile Asn Glu Arg Pro Pro  
                     180                      185                      190  
 Tyr Tyr Leu Gly Arg Asp Tyr Leu Glu Thr Leu Met Ala Ser Gln Lys  
                     195                      200                      205

Ala Ala Asp Trp Ile Arg Ile Ser Glu Met Leu Leu Gly Pro Val Pro  
 210 215 220

Pro Ser Phe Ala Phe Leu Pro Lys His Lys Ala Asn Ala Tyr Lys  
 225 230 235

<210> 2087

<211> 127

<212> PRT

<213> Homo sapiens

<400> 2087

Met Ala Gln Tyr Ile Leu Val Ile Ile Leu Ile Ser Phe Cys Ser Asp  
 1 5 10 15

Ser Leu Ser Gly Arg Ala Gln Asn Gly Thr Glu Ile Asn Gln Thr Val  
 20 25 30

Ile Leu Ile Cys Ser Leu Arg Phe Phe Lys Ser Glu Ala Ile Asp Ala  
 35 40 45

Cys Leu Met His Pro His Thr Ala Cys Leu Thr Gly Asp Ala Thr Leu  
 50 55 60

Leu Ser Ser Ser Ala Met Lys His Lys Arg Gln Arg Lys Ser Arg Tyr  
 65 70 75 80

Thr Ser His Arg Glu His Phe Arg Val Pro Gln Arg Trp Trp Gln Glu  
 85 90 95

Ala His Ser Arg Val Ser Ile Arg Val Cys Val Trp Val Ser Gly Ile  
 100 105 110

Ser Val Ala Pro Ile Phe Leu His Cys Ser Glu His Pro Val Leu  
 115 120 125

<210> 2088

<211> 138

<212> PRT

<213> Homo sapiens

<400> 2088

Met Lys Met Met Val Val Leu Leu Met Leu Ser Ser Leu Ser Arg Leu  
 1 5 10 15

Leu Gly Leu Met Arg Pro Ser Ser Leu Arg Gln Tyr Leu Asp Ser Val  
 20 25 30

Pro Leu Pro Pro Cys Gln Glu Gln Gln Pro Lys Ala Ser Ala Glu Leu  
 35 40 45

Asp His Lys Ala Cys Tyr Leu Cys His Ser Leu Leu Met Leu Ala Gly  
 50 55 60

Val Val Val Ser Cys Gln Asp Ile Thr Pro Asp Gln Trp Gly Glu Leu



65		70		75		80									
Gln	Leu	Leu	Cys	Met	Gln	Leu	Asp	Arg	His	Ile	Ser	Thr	Gln	Ile	Arg
			85						90					95	
Glu	Ser	Pro	Gln	Ala	Met	His	Arg	Thr	Met	Leu	Lys	Asp	Leu	Ala	Thr
		100						105					110		
Gln	Thr	Tyr	Ile	Arg	Trp	Gln	Glu	Leu	Leu	Thr	His	Cys	Gln	Pro	Gln
		115					120					125			
Ala	Gln	Tyr	Phe	Ser	Pro	Trp	Lys	Asp	Ile						
	130					135									

&lt;210&gt; 2089

&lt;211&gt; 132

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2089

Met	Glu	Ile	Tyr	Leu	Ser	Leu	Gly	Val	Leu	Ala	Leu	Gly	Thr	Leu	Ser
1				5					10					15	
Leu	Leu	Ala	Val	Thr	Ser	Leu	Pro	Ser	Ile	Ala	Asn	Ser	Leu	Asn	Trp
		20					25						30		
Arg	Glu	Phe	Ser	Phe	Val	Gln	Ser	Ser	Leu	Gly	Phe	Val	Ala	Leu	Val
		35				40						45			
Leu	Ser	Thr	Leu	His	Thr	Leu	Thr	Tyr	Gly	Trp	Thr	Arg	Ala	Phe	Glu
	50					55					60				
Glu	Ser	Arg	Tyr	Lys	Phe	Tyr	Leu	Pro	Pro	Thr	Phe	Thr	Leu	Thr	Leu
65					70					75					80
Leu	Val	Pro	Cys	Val	Val	Ile	Leu	Ala	Lys	Ala	Leu	Phe	Leu	Leu	Pro
			85						90					95	
Cys	Ile	Ser	Arg	Arg	Leu	Ala	Arg	Ile	Arg	Arg	Gly	Trp	Glu	Arg	Glu
			100				105						110		
Ser	Thr	Ile	Lys	Phe	Thr	Leu	Pro	Thr	Asp	His	Ala	Leu	Ala	Glu	Lys
		115					120					125			
Thr	Ser	His	Val												
	130														

&lt;210&gt; 2090

&lt;211&gt; 127

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (107)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (109)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (116)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2090

Met	Phe	Leu	Leu	Arg	Pro	Leu	Pro	Ile	Leu	Leu	Val	Thr	Gly	Gly	Gly
1				5					10					15	
Tyr	Ala	Gly	Tyr	Arg	Gln	Tyr	Glu	Lys	Tyr	Arg	Glu	Arg	Glu	Leu	Glu
		20						25					30		
Lys	Leu	Gly	Leu	Glu	Ile	Pro	Pro	Lys	Leu	Ala	Gly	His	Trp	Glu	Val
		35					40					45			
Ala	Leu	Tyr	Lys	Ser	Val	Pro	Thr	Arg	Leu	Leu	Ser	Arg	Ala	Trp	Gly
	50					55					60				
Arg	Leu	Asn	Gln	Val	Glu	Leu	Pro	His	Trp	Leu	Arg	Arg	Pro	Val	Tyr
65					70					75					80
Ser	Leu	Tyr	Ile	Trp	Thr	Phe	Gly	Val	Asn	Met	Lys	Glu	Ala	Ala	Val
			85						90					95	
Glu	Asp	Leu	His	His	Tyr	Arg	Asn	Leu	Ser	Xaa	Phe	Xaa	Arg	Arg	Lys
			100					105					110		
Leu	Lys	Ala	Xaa	Gly	Pro	Ala	Cys	Leu	Trp	Pro	Ala	Gln	Arg	Asp	
		115					120					125			

<210> 2091  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (87)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2091

Met	Phe	Leu	Leu	Arg	Pro	Leu	Pro	Ile	Leu	Leu	Val	Thr	Gly	Gly	Gly
1				5					10					15	
Tyr	Ala	Gly	Tyr	Arg	Gln	Tyr	Glu	Lys	Tyr	Arg	Glu	Arg	Glu	Leu	Glu
		20						25					30		
Lys	Leu	Gly	Leu	Glu	Ile	Pro	Pro	Lys	Leu	Ala	Gly	His	Trp	Glu	Val
		35					40					45			
Ala	Leu	Tyr	Lys	Ser	Val	Pro	Thr	Arg	Leu	Leu	Ser	Arg	Ala	Trp	Gly
	50					55					60				

Arg Leu Asn Gln Val Glu Leu Pro His Trp Leu Arg Arg Pro Val Tyr  
 65 70 75 80

Ser Leu Tyr Ile Trp Thr Xaa Gly Gly  
 85

<210> 2092

<211> 90

<212> PRT

<213> Homo sapiens

<400> 2092

Met Asp Trp Ala Val Leu Thr Val Val Leu Gly Pro Cys Val Pro Gly  
 1 5 10 15

Leu Ser Gly Ser Pro Pro Trp Pro Leu Pro Ser Ser His Leu Leu Glu  
 20 25 30

Ala Lys Leu Cys Glu Thr Trp His Ser Phe Gln Thr Ser Val Pro Pro  
 35 40 45

Arg Pro Cys Ala Gly Val Thr Pro Glu Leu Arg Met Ser Ala Arg Ser  
 50 55 60

Arg Gln Tyr Arg Glu Gly Thr Gln Arg Lys Ala Ser Gln Leu Ser Lys  
 65 70 75 80

Asp Arg Asp Arg Leu Trp Ser Gly Arg Ala  
 85 90

<210> 2093

<211> 110

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (98)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (100)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2093

Met Ala Ala Pro Ala Leu Gly Leu Val Cys Gly Arg Cys Pro Glu Leu  
 1 5 10 15

Gly Leu Val Leu Leu Leu Leu Leu Ser Leu Leu Cys Gly Ala Ala  
 20 25 30

Gly Ser Gln Glu Ala Gly Thr Gly Ala Gly Ala Gly Ser Leu Ala Gly  
 35 40 45

Ser Cys Gly Cys Gly Thr Pro Gln Arg Pro Gly Ala His Gly Ser Ser  
 50 55 60  
 Ala Ala Ala His Arg Tyr Ser Arg Glu Ala Asn Ala Pro Gly Pro Val  
 65 70 75 80  
 Pro Gly Glu Arg Gln Leu Ala His Ser Lys Val Leu His Arg Phe Leu  
 85 90 95  
 Arg Xaa Gly Xaa Gly Leu Leu Gly Ser Trp Thr Gly Leu Glu  
 100 105 110

<210> 2094  
 <211> 374  
 <212> PRT  
 <213> Homo sapiens

<400> 2094  
 Met Ala Ala Pro Ala Leu Gly Leu Val Cys Gly Arg Cys Pro Glu Leu  
 1 5 10 15  
 Gly Leu Val Leu Leu Leu Leu Leu Ser Leu Leu Cys Gly Ala Ala  
 20 25 30  
 Gly Ser Gln Glu Ala Gly Thr Gly Ala Gly Ala Gly Ser Leu Ala Gly  
 35 40 45  
 Ser Cys Gly Cys Gly Thr Pro Gln Arg Pro Gly Ala His Gly Ser Ser  
 50 55 60  
 Ala Ala Ala His Arg Tyr Ser Arg Glu Ala Asn Ala Pro Gly Pro Val  
 65 70 75 80  
 Pro Gly Glu Arg Gln Leu Ala His Ser Lys Met Val Pro Ile Pro Ala  
 85 90 95  
 Gly Val Phe Thr Met Gly Thr Asp Asp Pro Gln Ile Lys Gln Asp Gly  
 100 105 110  
 Glu Ala Pro Ala Arg Arg Val Thr Ile Asp Ala Phe Tyr Met Asp Ala  
 115 120 125  
 Tyr Glu Val Ser Asn Thr Glu Phe Glu Lys Phe Val Asn Ser Thr Gly  
 130 135 140  
 Tyr Leu Thr Glu Ala Glu Lys Phe Gly Asp Ser Phe Val Phe Glu Gly  
 145 150 155 160  
 Met Leu Ser Glu Gln Val Lys Thr Asn Ile Gln Gln Ala Val Ala Ala  
 165 170 175  
 Ala Pro Trp Trp Leu Pro Val Lys Gly Ala Asn Trp Arg His Pro Glu  
 180 185 190  
 Gly Pro Asp Ser Thr Ile Leu His Arg Pro Asp His Pro Val Leu His  
 195 200 205  
 Val Ser Trp Asn Asp Ala Val Ala Tyr Cys Thr Trp Ala Gly Lys Arg

210                      215                      220  
 Leu Pro Thr Glu Ala Glu Trp Glu Tyr Ser Cys Arg Gly Gly Leu His  
 225                      230                      235                      240  
 Asn Arg Leu Phe Pro Trp Gly Asn Lys Leu Gln Pro Lys Gly Gln His  
                     245                      250                      255  
 Tyr Ala Asn Ile Trp Gln Gly Glu Phe Pro Val Thr Asn Thr Gly Glu  
                     260                      265                      270  
 Asp Gly Phe Gln Gly Thr Ala Pro Val Asp Ala Phe Pro Pro Asn Gly  
                     275                      280                      285  
 Tyr Gly Leu Tyr Asn Ile Val Gly Asn Ala Trp Glu Trp Thr Ser Asp  
                     290                      295                      300  
 Trp Trp Thr Val His His Ser Val Glu Glu Thr Leu Asn Pro Lys Gly  
 305                      310                      315                      320  
 Pro Pro Ser Gly Lys Asp Arg Val Lys Lys Gly Gly Ser Tyr Met Cys  
                     325                      330                      335  
 His Arg Ser Tyr Cys Tyr Arg Tyr Arg Cys Ala Ala Arg Ser Gln Asn  
                     340                      345                      350  
 Thr Pro Asp Ser Ser Ala Ser Asn Leu Gly Phe Arg Cys Ala Ala Asp  
                     355                      360                      365  
 Arg Leu Pro Thr Met Asp  
 370

<210> 2095  
 <211> 53  
 <212> PRT  
 <213> Homo sapiens

<400> 2095  
 Met Ser Thr Phe Val Cys Val Cys Val Phe Cys Phe Val Leu Arg Ser  
   1                      5                      10                      15  
 Glu Ala Arg Ala Lys Arg Lys Gln Asp Gln Arg Asn Thr Lys Arg Cys  
                     20                      25                      30  
 Leu Leu Thr Lys Gly Gln Arg Asp Leu Ser Val Asn Gln Ser Lys Ile  
                     35                      40                      45  
 Asn Arg Thr Ala Asn  
                     50

<210> 2096  
 <211> 215  
 <212> PRT  
 <213> Homo sapiens

<220>

&lt;221&gt; SITE

&lt;222&gt; (7)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2096

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Met Leu Pro Trp Thr Ala Xaa Gly Leu Ala Leu Ser Leu Arg Leu Ala
 1           5           10           15

Leu Ala Arg Ser Gly Ala Glu Arg Gly Pro Pro Ala Ser Ala Pro Arg
          20           25           30

Gly Asp Leu Met Phe Leu Leu Asp Ser Ser Ala Ser Val Ser His Tyr
          35           40           45

Glu Phe Ser Arg Val Arg Glu Phe Val Gly Gln Leu Val Ala Pro Leu
          50           55           60

Pro Leu Gly Thr Gly Ala Leu Arg Ala Ser Leu Val His Val Gly Ser
          65           70           75           80

Arg Pro Tyr Thr Glu Phe Pro Phe Gly Gln His Ser Ser Gly Glu Ala
          85           90           95

Ala Gln Asp Ala Val Arg Ala Ser Ala Gln Arg Met Gly Asp Thr His
          100          105          110

Thr Gly Leu Ala Leu Val Tyr Ala Lys Glu Gln Leu Phe Ala Glu Ala
          115          120          125

Ser Gly Ala Arg Pro Gly Val Pro Lys Val Leu Val Trp Val Thr Asp
          130          135          140

Gly Gly Ser Ser Asp Pro Val Gly Pro Pro Met Gln Glu Leu Lys Asp
          145          150          155          160

Leu Gly Val Thr Val Phe Ile Val Ser Thr Gly Arg Gly Asn Phe Leu
          165          170          175

Glu Leu Ser Ala Ala Ala Ser Ala Pro Ala Glu Lys His Leu His Phe
          180          185          190

Val Asp Val Asp Asp Leu His Ile Ile Val Gln Glu Leu Arg Gly Ser
          195          200          205

Ile Leu Asp Ala Met Arg Pro
          210          215

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&lt;210&gt; 2097

&lt;211&gt; 127

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2097

```

Met Val Pro Gly Ala Ala Gly Trp Cys Cys Leu Val Leu Trp Leu Pro
 1           5           10           15

Ala Cys Val Ala Ala His Gly Phe Arg Ile His Asp Tyr Leu Tyr Phe
          20           25           30

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Gln Val Leu Ser Pro Gly Asp Ile Arg Tyr Ile Phe Thr Ala Thr Pro  
                   35                                  40                                  45

Ala Lys Asp Phe Gly Gly Ile Phe His Thr Arg Tyr Glu Gln Ile His  
                   50                                  55                                  60

Leu Val Pro Ala Glu Pro Pro Glu Ala Cys Gly Glu Leu Ser Asn Gly  
                   65                                  70                                  75                                  80

Phe Phe Ile Gln Asp Gln Ile Ala Leu Val Glu Arg Gly Gly Cys Ser  
                                   85                                  90                                  95

Phe Leu Ser Lys Thr Arg Val Val Gln Glu His Gly Gly Arg Ala Val  
                                   100                                  105                                  110

Ile Ile Ser Asp Asn Ala Leu Thr Met Thr Ala Ser Thr Trp Arg  
                   115                                  120                                  125

&lt;210&gt; 2098

&lt;211&gt; 188

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2098

Met Val Pro Gly Ala Ala Gly Trp Cys Cys Leu Val Leu Trp Leu Pro  
                   1                                  5                                  10                                  15

Ala Cys Val Ala Ala His Gly Phe Arg Ile His Asp Tyr Leu Tyr Phe  
                                   20                                  25                                  30

Gln Val Leu Ser Pro Gly Asp Ile Arg Tyr Ile Phe Thr Ala Thr Pro  
                   35                                  40                                  45

Ala Lys Asp Phe Gly Gly Ile Phe His Thr Arg Tyr Glu Gln Ile His  
                   50                                  55                                  60

Leu Val Pro Ala Glu Pro Pro Glu Ala Cys Gly Glu Leu Ser Asn Gly  
                   65                                  70                                  75                                  80

Phe Phe Ile Gln Asp Gln Ile Ala Leu Val Glu Arg Gly Gly Cys Ser  
                                   85                                  90                                  95

Phe Leu Ser Lys Thr Arg Val Val Gln Glu His Gly Gly Arg Ala Val  
                                   100                                  105                                  110

Ile Ile Ser Asp Asn Ala Val Asp Asn Asp Ser Phe Tyr Val Glu Met  
                   115                                  120                                  125

Ile Gln Asp Ser Thr Gln Arg Thr Ala Asp Ile Pro Ala Leu Phe Leu  
                   130                                  135                                  140

Leu Gly Arg Asp Gly Tyr Met Ile Arg Arg Ser Leu Glu Gln His Gly  
                   145                                  150                                  155                                  160

Leu Pro Trp Ala Ile Ile Ser Ile Pro Val Asn Val Thr Ser Ile Pro  
                                   165                                  170                                  175

Thr Phe Glu Leu Leu Gln Pro Pro Trp Thr Phe Trp  
 180 185

<210> 2099  
 <211> 72  
 <212> PRT  
 <213> Homo sapiens

<400> 2099  
 Met Leu Val Leu Phe Lys Phe Leu Pro Leu Thr Ser Ser Gly Arg Phe  
 1 5 10 15  
 Leu Ser Val Thr Leu Tyr His Arg Val His His Gln Thr Phe Phe Ala  
 20 25 30  
 Gly Ala Lys Ser Phe Ser Pro Ala Ser Thr Leu Asn Leu Tyr Ile Cys  
 35 40 45  
 Ser Ser Gln Phe Gln Ser Leu Gln Lys Leu Tyr Cys Gly Val Ile Pro  
 50 55 60  
 Val Leu Arg Tyr Ala Ser Ile Glu  
 65 70

<210> 2100  
 <211> 112  
 <212> PRT  
 <213> Homo sapiens

<400> 2100  
 Met Ala Tyr Leu Thr Leu Phe Gln Met Gly Ser Trp Met Ser Phe Ser  
 1 5 10 15  
 Leu Ser Leu Cys Ser Leu Leu Phe Ile Leu Thr Gly His Cys Leu Ser  
 20 25 30  
 Glu Asn Phe Tyr Val Arg Gly Asp Gly Thr Arg Ala Tyr Phe Phe Thr  
 35 40 45  
 Lys Gly Glu Val His Ser Met Phe Cys Lys Ala Ser Leu Asp Glu Lys  
 50 55 60  
 Gln Asn Leu Val Asp Arg Arg Leu Gln Val Asn Arg Lys Lys Gln Val  
 65 70 75 80  
 Lys Met His Arg Val Trp Ile Gln Gly Lys Phe Gln Lys Pro Leu His  
 85 90 95  
 Gln Thr Gln Asn Ser Ser Asn Met Val Ser Thr Leu Leu Ser Gln Asp  
 100 105 110



<210> 2101  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 2101

```

Met Gly Trp Ile Asp Leu Leu Leu Pro Glu Leu Gly Ala Leu Arg Val
 1             5             10             15

Phe Leu His Leu Phe Leu Val Ala Leu Arg Thr Lys Arg Trp Ile Phe
          20             25             30

Arg Thr Leu Gly Gln Leu Thr Cys Val Asn Ile Leu Gly Asp Ser Arg
          35             40             45

Lys Lys Arg Glu Cys Arg Leu Asn Lys Arg Gln Leu Gln Phe Gly Glu
          50             55             60

Lys Thr Leu Gln Val Pro Glu Arg Leu Val Val Arg His Ser Pro Phe
 65             70             75             80
  
```

<210> 2102  
 <211> 49  
 <212> PRT  
 <213> Homo sapiens

<400> 2102

```

Met Gln Val Ser Ser Trp Val Val Phe Gln Leu Val Trp Asn Ser Leu
 1             5             10             15

Val Leu Thr Gln Thr Gly Ile Lys His Tyr Phe Arg Phe Ser Leu Cys
          20             25             30

Gln Phe Leu Ser Ser Tyr Asn His Val Asn Gln Asp Val Arg Thr Ser
          35             40             45

Ile
  
```

<210> 2103  
 <211> 179  
 <212> PRT  
 <213> Homo sapiens

<220>

<221> SITE

<222> (143)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2103

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Met Ala Gln Val Leu Ala Ser Glu Leu Ser Leu Val Ala Phe Ile Leu
 1             5             10             15
  
```

Leu Leu Val Met Ala Phe Ser Lys Lys Trp Leu Asp Leu Ser Arg Ser  
                   20                                  25                                  30  
 Leu Phe Tyr Gln Arg Trp Pro Val Asp Val Ser Asn Arg Ile His Thr  
                   35                                  40                                  45  
 Ser Ala His Val Met Ser Met Gly Leu Leu His Phe Cys Lys Ser Arg  
           50                                  55                                  60  
 Ser Cys Ser Asp Leu Glu Asn Gly Lys Val Thr Phe Ile Phe Ser Thr  
           65                                  70                                  75                                  80  
 Leu Met Leu Phe Pro Ile Asn Ile Trp Ile Phe Glu Leu Glu Arg Asn  
                                   85                                  90                                  95  
 Val Ser Ile Pro Ile Gly Trp Ser Tyr Phe Ile Gly Trp Leu Val Leu  
                   100                                  105                                  110  
 Ile Leu Tyr Phe Thr Cys Ala Ile Leu Cys Tyr Phe Asn His Lys Ser  
                   115                                  120                                  125  
 Phe Trp Ser Leu Ile Leu Ser His Pro Ser Gly Ala Val Ser Xaa Ser  
           130                                  135                                  140  
 Ser Ser Phe Gly Ser Val Glu Glu Ser Pro Arg Ala Gln Thr Ile Thr  
           145                                  150                                  155                                  160  
 Asp Thr Pro Ile Thr Gln Glu Gly Val Leu Asp Pro Glu Gln Lys Asp  
                   165                                  170                                  175  
 Thr His Val

<210> 2104  
 <211> 122  
 <212> PRT  
 <213> Homo sapiens

<400> 2104

Met Pro Pro Leu Ala Pro Gln Leu Cys Arg Ala Val Phe Leu Val Pro  
   1                                  5                                  10                                  15  
 Ile Leu Leu Leu Leu Gln Val Lys Pro Leu Asn Gly Ser Pro Gly Pro  
                   20                                  25                                  30  
 Lys Asp Gly Ser Gln Thr Glu Lys Thr Pro Ser Ala Asp Gln Asn Gln  
           35                                  40                                  45  
 Glu Gln Phe Glu Glu His Phe Val Ala Ser Ser Val Gly Glu Met Trp  
           50                                  55                                  60  
 Gln Val Val Asp Met Ala Gln Gln Glu Glu Asp Gln Ser Ser Lys Thr  
           65                                  70                                  75                                  80  
 Ala Ala Val His Lys His Ser Phe His Leu Ser Phe Cys Phe Ser Leu  
                   85                                  90                                  95  
 Ala Ser Val Met Val Phe Ser Gly Gly Pro Leu Arg Arg Thr Phe Pro

100 105 110

Asn Ile Gln Leu Cys Phe Met Leu Thr His  
115 120

<210> 2105  
<211> 122  
<212> PRT  
<213> Homo sapiens

<400> 2105  
Met Pro Pro Leu Ala Pro Gln Leu Cys Arg Ala Val Phe Leu Val Pro  
1 5 10 15  
Ile Leu Leu Leu Gln Val Lys Pro Leu Asn Gly Ser Pro Gly Pro  
20 25 30  
Lys Asp Gly Ser Gln Thr Glu Lys Thr Pro Ser Ala Asp Gln Asn Gln  
35 40 45  
Glu Gln Phe Glu Glu His Phe Val Ala Ser Ser Val Gly Glu Met Trp  
50 55 60  
Gln Val Val Asp Met Ala Gln Gln Glu Glu Asp Gln Ser Ser Lys Thr  
65 70 75 80  
Ala Ala Val His Lys His Ser Phe His Leu Ser Phe Cys Phe Ser Leu  
85 90 95  
Ala Ser Val Met Val Phe Ser Gly Gly Pro Leu Arg Arg Thr Phe Pro  
100 105 110  
Asn Ile Gln Leu Cys Phe Met Leu Thr His  
115 120

<210> 2106  
<211> 459  
<212> PRT  
<213> Homo sapiens

<220>  
<221> SITE  
<222> (321)  
<223> Xaa equals any of the naturally occurring L-amino acids

<220>  
<221> SITE  
<222> (345)  
<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2106  
Met Gly Gly Pro Arg Ala Trp Ala Leu Leu Cys Leu Gly Leu Leu Leu  
1 5 10 15  
Pro Gly Gly Gly Ala Ala Trp Ser Ile Gly Ala Ala Pro Phe Ser Gly  
20 25 30

Arg Arg Asn Trp Cys Ser Tyr Val Val Thr Arg Thr Ile Ser Cys His  
 35 40 45  
 Val Gln Asn Gly Thr Tyr Leu Gln Arg Val Leu Gln Asn Cys Pro Trp  
 50 55 60  
 Pro Met Ser Cys Pro Gly Ser Ser Tyr Arg Thr Val Val Arg Pro Thr  
 65 70 75 80  
 Tyr Lys Val Met Tyr Lys Ile Val Thr Ala Arg Glu Trp Arg Cys Cys  
 85 90 95  
 Pro Gly His Ser Gly Val Ser Cys Glu Glu Val Ala Ala Ser Ser Ala  
 100 105 110  
 Ser Leu Glu Pro Met Trp Ser Gly Ser Thr Met Arg Arg Met Ala Leu  
 115 120 125  
 Arg Pro Thr Ala Phe Ser Gly Cys Leu Asn Cys Ser Lys Val Ser Glu  
 130 135 140  
 Leu Thr Glu Arg Leu Lys Val Leu Glu Ala Lys Met Thr Met Leu Thr  
 145 150 155 160  
 Val Ile Glu Gln Pro Val Pro Pro Thr Pro Ala Thr Pro Glu Asp Pro  
 165 170 175  
 Ala Pro Leu Trp Gly Pro Pro Pro Ala Gln Gly Ser Pro Gly Asp Gly  
 180 185 190  
 Gly Leu Gln Asp Gln Val Gly Ala Trp Gly Leu Pro Gly Pro Thr Gly  
 195 200 205  
 Pro Lys Gly Asp Ala Gly Ser Arg Gly Pro Met Gly Met Arg Gly Pro  
 210 215 220  
 Pro Gly Pro Gln Gly Pro Pro Gly Ser Pro Gly Arg Ala Gly Ala Val  
 225 230 235 240  
 Gly Thr Pro Gly Glu Arg Gly Pro Pro Gly Pro Pro Gly Pro Pro Gly  
 245 250 255  
 Pro Pro Gly Pro Pro Ala Pro Val Gly Pro Pro His Ala Arg Ile Ser  
 260 265 270  
 Gln His Gly Asp Pro Leu Leu Ser Asn Thr Phe Thr Glu Thr Asn Asn  
 275 280 285  
 His Trp Pro Gln Gly Pro Thr Gly Pro Pro Gly Pro Pro Gly Pro Met  
 290 295 300  
 Gly Pro Pro Gly Pro Pro Gly Pro Thr Gly Val Pro Gly Ser Pro Gly  
 305 310 315 320  
 Xaa Ile Gly Pro Pro Gly Pro Thr Gly Pro Lys Gly Ile Ser Gly His  
 325 330 335  
 Pro Gly Glu Lys Gly Glu Lys Lys Xaa Leu Arg Gly Glu Pro Gly Pro  
 340 345 350

Gln Gly Ser Ala Gly Gln Arg Gly Glu Pro Gly Pro Lys Gly Asp Pro  
 355 360 365

Gly Glu Lys Ser His Trp Asn Gln Ser Trp Gly Leu Gly Gly Pro Cys  
 370 375 380

Arg His Arg His Pro Gln Pro Pro Ser Gly Gln Glu Gly Gly His Ala  
 385 390 395 400

Thr Asn Tyr Arg Asp Arg Gly Pro Gln Glu Pro Gly Arg Glu Arg Leu  
 405 410 415

Arg Val Val Ala Ala Pro Glu Ala Asp Gln Ala Arg Leu Pro Leu Leu  
 420 425 430

Pro Gly Leu Gly Gln Leu Pro Pro Gly Thr Ala Arg Pro Tyr Leu Leu  
 435 440 445

Met Ser Ser Gly Ser Leu Leu Pro Ser Arg Pro  
 450 455

<210> 2107  
 <211> 615  
 <212> PRT  
 <213> Homo sapiens

<400> 2107

Met Ile Leu Phe Leu Leu Ala Phe Leu Leu Phe Cys Gly Leu Leu Phe  
 1 5 10 15

Tyr Ile Asn Leu Ala Asp His Trp Lys Ala Leu Ala Phe Arg Leu Glu  
 20 25 30

Glu Glu Gln Lys Met Arg Pro Glu Ile Ala Gly Leu Lys Pro Ala Asn  
 35 40 45

Pro Pro Val Leu Pro Ala Pro Gln Lys Ala Asp Thr Asp Pro Glu Asn  
 50 55 60

Leu Pro Glu Ile Ser Ser Gln Lys Thr Gln Arg His Ile Gln Arg Gly  
 65 70 75 80

Pro Pro His Leu Gln Ile Arg Pro Pro Ser Gln Asp Leu Lys Asp Gly  
 85 90 95

Thr Gln Glu Glu Ala Thr Lys Arg Gln Glu Ala Pro Val Asp Pro Arg  
 100 105 110

Pro Glu Gly Asp Pro Gln Arg Thr Val Ile Ser Trp Arg Gly Ala Val  
 115 120 125

Ile Glu Pro Glu Gln Gly Thr Glu Leu Pro Ser Arg Arg Ala Glu Val  
 130 135 140

Pro Thr Lys Pro Pro Leu Pro Pro Ala Arg Thr Gln Gly Thr Pro Val  
 145 150 155 160

His Leu Asn Tyr Arg Gln Lys Gly Val Ile Asp Val Phe Leu His Ala  
 165 170 175  
 Trp Lys Gly Tyr Arg Lys Phe Ala Trp Gly His Asp Glu Leu Lys Pro  
 180 185 190  
 Val Ser Arg Ser Phe Ser Glu Trp Phe Gly Leu Gly Leu Thr Leu Ile  
 195 200 205  
 Asp Ala Leu Asp Thr Met Trp Ile Leu Gly Leu Arg Lys Glu Phe Glu  
 210 215 220  
 Glu Ala Arg Lys Trp Val Ser Lys Lys Leu His Phe Glu Lys Asp Val  
 225 230 235 240  
 Asp Val Asn Leu Phe Glu Ser Thr Ile Arg Ile Leu Gly Gly Leu Leu  
 245 250 255  
 Ser Ala Tyr His Leu Ser Gly Asp Ser Leu Phe Leu Arg Lys Ala Glu  
 260 265 270  
 Asp Phe Gly Asn Arg Leu Met Pro Ala Phe Arg Thr Pro Ser Lys Ile  
 275 280 285  
 Pro Tyr Ser Asp Val Asn Ile Gly Thr Gly Val Ala His Pro Pro Arg  
 290 295 300  
 Trp Thr Ser Asp Ser Thr Val Ala Glu Val Thr Ser Ile Gln Leu Glu  
 305 310 315 320  
 Phe Arg Glu Leu Ser Arg Leu Thr Gly Asp Lys Lys Phe Gln Glu Ala  
 325 330 335  
 Val Glu Lys Val Thr Gln His Ile His Gly Leu Ser Gly Lys Lys Asp  
 340 345 350  
 Gly Leu Val Pro Met Phe Ile Asn Thr His Ser Gly Leu Phe Thr His  
 355 360 365  
 Leu Gly Val Phe Thr Leu Gly Ala Arg Ala Asp Ser Tyr Tyr Glu Tyr  
 370 375 380  
 Leu Leu Lys Gln Trp Ile Gln Gly Gly Lys Gln Glu Thr Gln Leu Leu  
 385 390 395 400  
 Glu Asp Tyr Val Glu Ala Ile Glu Gly Val Arg Thr His Leu Leu Arg  
 405 410 415  
 His Ser Glu Pro Ser Lys Leu Thr Phe Val Gly Glu Leu Ala His Gly  
 420 425 430  
 Arg Phe Ser Ala Lys Met Asp His Leu Val Cys Phe Leu Pro Gly Thr  
 435 440 445  
 Leu Ala Leu Gly Val Tyr His Gly Leu Pro Ala Ser His Met Glu Leu  
 450 455 460  
 Ala Gln Glu Leu Met Glu Thr Cys Tyr Gln Met Asn Arg Gln Met Glu  
 465 470 475 480

Thr Gly Leu Ser Pro Glu Ile Val His Phe Asn Leu Tyr Pro Gln Pro  
 485 490 495  
 Gly Arg Arg Asp Val Glu Val Lys Pro Ala Asp Arg His Asn Leu Leu  
 500 505 510  
 Arg Pro Glu Thr Val Glu Ser Leu Phe Tyr Leu Tyr Arg Val Thr Gly  
 515 520 525  
 Asp Arg Lys Tyr Gln Asp Trp Gly Trp Glu Ile Leu Gln Ser Phe Ser  
 530 535 540  
 Arg Phe Thr Arg Val Pro Ser Gly Gly Tyr Ser Ser Ile Asn Asn Val  
 545 550 555 560  
 Gln Asp Pro Gln Lys Pro Glu Pro Arg Asp Lys Met Glu Ser Phe Phe  
 565 570 575  
 Leu Gly Glu Thr Leu Lys Tyr Leu Phe Leu Leu Phe Ser Asp Asp Pro  
 580 585 590  
 Asn Leu Leu Ser Leu Asp Ala Tyr Val Phe Asn Thr Glu Ala His Pro  
 595 600 605  
 Leu Pro Ile Trp Thr Pro Ala  
 610 615

&lt;210&gt; 2108

&lt;211&gt; 404

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (41)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (77)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (96)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (98)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (108)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

<221> SITE  
 <222> (122)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (124)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (126)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (175)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (192)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (210)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (236)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (239)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (309)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (335)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <220>  
 <221> SITE  
 <222> (389)  
 <223> Xaa equals any of the naturally occurring L-amino acids  
  
 <400> 2108  
 Met His Pro Ile Pro Ser Ser Phe Met Ile Lys Ala Val Ser Ser Phe  
   1                  5                  10                  15  
 Leu Thr Ala Glu Glu Ala Ser Val Gly Asn Pro Glu Gly Ala Phe Met  
           20                  25                  30



Lys Val Leu Gln Ala Arg Lys Asn Xaa Thr Ser Thr Glu Leu Ile Val  
 35 40 45  
 Glu Pro Glu Glu Pro Ser Asp Ser Ser Gly Ile Asn Leu Ser Gly Phe  
 50 55 60  
 Gly Ser Glu Gln Leu Asp Thr Asn Asp Glu Ser Asp Xaa Ile Ser Thr  
 65 70 75 80  
 Leu Ser Tyr Ile Leu Pro Tyr Phe Ser Ala Val Asn Leu Asp Val Xaa  
 85 90 95  
 Ser Xaa Leu Leu Pro Phe Ile Lys Leu Pro Thr Xaa Gly Asn Ser Leu  
 100 105 110  
 Ala Lys Ile Gln Thr Val Gly Gln Asn Xaa Gln Xaa Val Xaa Arg Val  
 115 120 125  
 Leu Met Gly Pro Arg Ser Ile Gln Lys Arg His Phe Lys Glu Val Gly  
 130 135 140  
 Arg Gln Ser Ile Arg Arg Glu Gln Gly Ala Gln Ala Ser Val Glu Asn  
 145 150 155 160  
 Ala Ala Glu Glu Lys Arg Leu Gly Ser Pro Ala Pro Arg Glu Xaa Glu  
 165 170 175  
 Gln Pro His Thr Gln Gln Gly Pro Glu Lys Leu Ala Gly Asn Ala Xaa  
 180 185 190  
 Tyr Thr Lys Pro Ser Phe Thr Gln Glu His Lys Ala Ala Val Ser Val  
 195 200 205  
 Leu Xaa Pro Phe Ser Lys Gly Ala Pro Ser Thr Ser Ser Pro Ala Lys  
 210 215 220  
 Ala Leu Pro Gln Val Arg Asp Arg Trp Lys Asp Xaa Thr His Xaa Ile  
 225 230 235 240  
 Ser Ile Leu Glu Ser Ala Lys Ala Arg Val Thr Asn Met Lys Ala Ser  
 245 250 255  
 Lys Pro Ile Ser His Ser Arg Lys Lys Tyr Arg Phe His Lys Thr Arg  
 260 265 270  
 Ser Arg Met Thr His Arg Thr Pro Lys Val Lys Lys Ser Pro Lys Phe  
 275 280 285  
 Arg Lys Lys Ser Tyr Leu Ser Arg Leu Met Leu Ala Asn Arg Pro Pro  
 290 295 300  
 Phe Ser Ala Ala Xaa Ser Leu Ile Asn Ser Pro Ser Gln Gly Ala Phe  
 305 310 315 320  
 Ser Ser Leu Gly Asp Leu Ser Pro Gln Glu Asn Pro Phe Leu Xaa Val  
 325 330 335  
 Ser Ala Pro Ser Glu His Phe Ile Glu Thr Thr Asn Ile Lys Asp Thr  
 340 345 350

Thr Ala Arg Asn Ala Leu Glu Glu Asn Val Phe Met Glu Asn Thr Asn  
 355 360 365

Met Pro Glu Val Thr Ile Ser Glu Asn Thr Asn Tyr Asn His Pro Pro  
 370 375 380

Glu Ala Asp Ser Xaa Gly Thr Ala Phe Asn Leu Gly Pro Thr Val Lys  
 385 390 395 400

Gln Thr Glu Thr

<210> 2109

<211> 45

<212> PRT

<213> Homo sapiens

<400> 2109

Met Val Thr Ser Gly Met Leu Val Phe Ser Ile Lys Thr Phe Ser Ser  
 1 5 10 15

Lys Ala Phe Leu Ala Val Val Ser Phe Ile Leu Val Val Ser Ile Lys  
 20 25 30

Cys Ser Glu Gly Ala Asp Thr Ser Arg Lys Gly Phe Ser  
 35 40 45

<210> 2110

<211> 45

<212> PRT

<213> Homo sapiens

<400> 2110

Met Val Thr Ser Gly Met Leu Val Phe Ser Ile Lys Thr Phe Ser Ser  
 1 5 10 15

Lys Ala Phe Leu Ala Val Val Ser Phe Ile Leu Val Val Ser Ile Lys  
 20 25 30

Cys Ser Glu Gly Ala Asp Thr Ser Arg Lys Gly Phe Ser  
 35 40 45

<210> 2111

<211> 257

<212> PRT

<213> Homo sapiens

<400> 2111

Met Glu Met Ile Ile Gln Phe Gly Phe Val Thr Leu Phe Val Ala Ser  
 1 5 10 15

Phe Pro Leu Ala Pro Leu Phe Ala Leu Leu Asn Asn Ile Ile Glu Ile  
 20 25 30

[illegible]

```
<210> 2112
<211> 50
<212> PRT
<213> Homo sapiens
```

```

<400> 2112
Met Thr His Gly Cys Leu Ser Leu Ala Ser Met Ala Ala Gly Leu Gly
 1          5          10          15

Ser Val Ser Leu Phe Leu Phe Val Gln Gln Trp Thr Pro Thr Thr Ala
          20          25          30

```

Ser Thr Gly Glu Thr Pro Ser Ser Trp Gln Lys Thr Thr Ser Cys Val  
                   35                                  40                                  45

Arg Arg  
       50

<210> 2113  
 <211> 50  
 <212> PRT  
 <213> Homo sapiens

<400> 2113  
 Met Thr His Gly Cys Leu Ser Leu Ala Ser Met Ala Ala Gly Leu Gly  
       1                                  5                                  10                                  15

Ser Val Ser Leu Phe Leu Phe Val Gln Gln Trp Thr Pro Thr Thr Ala  
                   20                                  25                                  30

Ser Thr Gly Glu Thr Pro Ser Ser Trp Gln Lys Thr Thr Ser Cys Val  
                   35                                  40                                  45

Arg Arg  
       50

<210> 2114  
 <211> 74  
 <212> PRT  
 <213> Homo sapiens

<400> 2114  
 Met Val Leu Leu Leu Leu Leu Leu Leu Gln Lys Ile Pro Gly Thr Pro  
       1                                  5                                  10                                  15

Leu Phe Gln Pro Gly Phe Leu Gly Trp Ala Gln Glu Ser Cys Gln Ile  
                   20                                  25                                  30

Gln Ser Tyr Val Gly Ser Lys Leu Pro Leu Cys Cys Phe Cys Gln Ala  
                   35                                  40                                  45

Arg Cys Gly His Ser Lys Phe Ile Cys Val Asn Lys Arg Lys Glu Glu  
       50                                  55                                  60

Pro Ser Gly Cys Asn Arg Thr Asp Ser Ser  
       65                                  70

<210> 2115  
 <211> 94  
 <212> PRT  
 <213> Homo sapiens

<400> 2115  
 Met Trp Pro Trp Trp Leu Met Val Glu Arg Thr Val Val Leu Leu Leu  
       1                                  5                                  10                                  15

Ile Thr Tyr Leu Val Pro Val Gly Gly Ser Ala Val Gly Pro Pro Gly  
                   20                  25                  30  
 Pro Gly Cys Asn Val Ser Thr Ser Pro Pro Pro Pro Ala Thr Arg Cys  
                   35                  40                  45  
 Pro Asp Glu Ser Glu Leu Tyr Arg Asp Pro Gly Glu Ala Pro Leu Glu  
           50                  55                  60  
 Ala Asp Gln Ala Glu Arg Gly Ala Ala His Glu Gly Gly His Pro Gly  
       65                  70                  75                  80  
 Arg Asp Pro Trp Gly Ala Arg Arg Gly Pro Pro Arg Cys Gly  
                   85                  90

&lt;210&gt; 2116

&lt;211&gt; 180

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2116

Met Ala Ile Cys Ser Cys Gln Cys Pro Ala Ala Met Ala Phe Cys Phe  
   1                  5                  10                  15  
 Leu Glu Thr Leu Trp Trp Glu Phe Thr Ala Ser Tyr Asp Thr Thr Cys  
                   20                  25                  30  
 Ile Gly Leu Ala Ser Arg Pro Tyr Ala Phe Leu Glu Phe Asp Ser Ile  
           35                  40                  45  
 Ile Gln Lys Val Lys Trp His Phe Asn Tyr Val Ser Ser Ser Gln Met  
       50                  55                  60  
 Glu Cys Ser Leu Glu Lys Ile Gln Glu Glu Leu Lys Leu Gln Pro Pro  
       65                  70                  75                  80  
 Ala Val Leu Thr Leu Glu Asp Thr Asp Val Ala Asn Gly Val Met Asn  
                   85                  90                  95  
 Gly His Thr Pro Met His Leu Glu Pro Ala Pro Asn Phe Arg Met Glu  
           100                  105                  110  
 Pro Val Thr Ala Leu Gly Ile Leu Ser Leu Ile Leu Asn Ile Met Cys  
           115                  120                  125  
 Ala Ala Leu Asn Leu Ile Arg Gly Val His Leu Ala Glu His Ser Leu  
       130                  135                  140  
 Gln Val Ala His Glu Glu Ile Gly Asn Ile Leu Ala Phe Leu Val Pro  
       145                  150                  155                  160  
 Phe Val Ala Cys Ile Phe Gln Asp Pro Arg Ser Trp Phe Cys Trp Leu  
           165                  170                  175  
 Asp Gln Thr Ser  
           180

<210> 2117  
 <211> 80  
 <212> PRT  
 <213> Homo sapiens

<400> 2117  
 Met Trp Pro Arg Met Leu Ala Phe Ser Thr Trp Leu Glu Trp Leu Leu  
     1                    5                    10                    15  
 Phe Ser Pro Leu Pro Gln Ser Val Gly Cys Pro Gly Pro Leu Glu Phe  
                     20                    25                    30  
 Tyr Cys Val Gln Asp Arg Arg Pro Ser Leu Pro Asp Gly Ala Asp  
                     35                    40                    45  
 His Phe Ser Ser Pro Thr Arg Ile Thr Ser Ser Ser Ile Ser Pro Ala  
                     50                    55                    60  
 Leu Ser Leu Gln Ala Pro Glu Ala Gly Gly Phe Leu Ser Ile Pro Gly  
     65                    70                    75                    80

<210> 2118  
 <211> 21  
 <212> PRT  
 <213> Homo sapiens

<400> 2118  
 Met His Asp Val Leu Phe Phe Leu Ser Phe Ser Leu Val Ala Cys Val  
     1                    5                    10                    15  
 Lys Ala Gly Met Leu  
                     20

<210> 2119  
 <211> 291  
 <212> PRT  
 <213> Homo sapiens

<400> 2119  
 Met Asp Phe Ile Gln His Leu Gly Val Cys Cys Leu Val Ala Leu Ile  
     1                    5                    10                    15  
 Ser Val Gly Leu Leu Ser Val Ala Ala Cys Trp Phe Leu Pro Ser Ile  
                     20                    25                    30  
 Ile Ala Ala Ala Ala Ser Trp Ile Ile Thr Cys Val Leu Leu Cys Cys  
                     35                    40                    45  
 Ser Lys His Ala Arg Cys Phe Ile Leu Leu Val Phe Leu Ser Cys Gly  
                     50                    55                    60  
 Leu Arg Glu Gly Arg Asn Ala Leu Ile Ala Ala Gly Thr Gly Ile Val

65		70		75		80									
Ile	Leu	Gly	His	Val	Glu	Asn	Ile	Phe	His	Asn	Phe	Lys	Gly	Leu	Leu
				85					90					95	
Asp	Gly	Met	Thr	Cys	Asn	Leu	Arg	Ala	Lys	Ser	Phe	Ser	Ile	His	Phe
			100					105					110		
Pro	Leu	Leu	Lys	Lys	Tyr	Ile	Glu	Ala	Ile	Gln	Trp	Ile	Tyr	Gly	Leu
		115					120					125			
Ala	Thr	Pro	Leu	Ser	Val	Phe	Asp	Asp	Leu	Val	Ser	Trp	Asn	Gln	Thr
	130					135					140				
Leu	Ala	Val	Ser	Leu	Phe	Ser	Pro	Ser	His	Val	Leu	Glu	Ala	Gln	Leu
145					150					155					160
Asn	Asp	Ser	Lys	Gly	Glu	Val	Leu	Ser	Val	Leu	Tyr	Gln	Met	Ala	Thr
			165						170					175	
Thr	Thr	Glu	Val	Leu	Ser	Ser	Leu	Gly	Gln	Lys	Leu	Leu	Ala	Phe	Ala
			180					185					190		
Gly	Leu	Ser	Leu	Val	Leu	Leu	Gly	Thr	Gly	Leu	Phe	Met	Lys	Arg	Phe
		195					200					205			
Leu	Gly	Pro	Cys	Gly	Trp	Lys	Tyr	Glu	Asn	Ile	Tyr	Ile	Thr	Arg	Gln
	210					215					220				
Phe	Val	Gln	Phe	Asp	Glu	Arg	Glu	Arg	His	Gln	Gln	Arg	Pro	Cys	Met
225					230					235					240
Leu	Pro	Leu	Asn	Lys	Glu	Glu	Arg	Arg	Lys	Asn	Lys	Glu	Leu	Lys	Ile
				245					250					255	
Leu	Ser	Met	Ile	Leu	Pro	Leu	Ile	Tyr	Leu	Cys	Leu	Asn	Pro	Thr	Val
			260					265					270		
Ser	Gln	Asn	Gln	Asn	Ser	Phe	Tyr	Leu	Arg	Pro	Gly	Phe	Leu	Ser	Val
		275					280					285			
Leu	Phe	Phe													
	290														

&lt;210&gt; 2120

&lt;211&gt; 257

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2120

Met	Asp	Phe	Ile	Gln	His	Leu	Gly	Val	Cys	Cys	Leu	Val	Ala	Leu	Ile
1					5				10					15	
Ser	Val	Gly	Leu	Leu	Ser	Val	Ala	Ala	Cys	Trp	Phe	Leu	Pro	Ser	Ile
			20					25					30		
Ile	Ala	Ala	Ala	Ala	Ser	Trp	Ile	Ile	Thr	Cys	Val	Leu	Leu	Cys	Cys
	35						40					45			

Ser Lys His Ala Arg Cys Phe Ile Leu Leu Val Phe Leu Ser Cys Gly  
 50 55 60  
 Leu Arg Glu Gly Arg Asn Ala Leu Ile Ala Ala Gly Thr Gly Ile Val  
 65 70 75 80  
 Ile Leu Gly His Val Glu Asn Ile Phe His Asn Phe Lys Gly Leu Leu  
 85 90 95  
 Asp Gly Met Thr Cys Asn Leu Arg Ala Lys Ser Phe Ser Ile His Phe  
 100 105 110  
 Pro Leu Leu Lys Lys Tyr Ile Glu Ala Ile Gln Trp Ile Tyr Gly Leu  
 115 120 125  
 Ala Thr Pro Leu Ser Val Phe Asp Asp Leu Val Ser Trp Asn Gln Thr  
 130 135 140  
 Leu Ala Val Ser Leu Phe Ser Pro Ser His Val Leu Glu Ala Gln Leu  
 145 150 155 160  
 Asn Asp Ser Lys Gly Glu Val Leu Ser Val Leu Tyr Gln Met Ala Thr  
 165 170 175  
 Thr Thr Glu Val Leu Ser Ser Leu Gly Gln Lys Leu Leu Ala Phe Ala  
 180 185 190  
 Gly Leu Ser Leu Val Leu Leu Gly Thr Gly Leu Phe Met Lys Arg Phe  
 195 200 205  
 Leu Gly Pro Cys Gly Trp Lys Tyr Glu Asn Ile Tyr Ile Thr Arg Gln  
 210 215 220  
 Phe Val Gln Phe Asp Glu Arg Glu Arg His Gln Gln Arg Pro Cys Val  
 225 230 235 240  
 Leu Pro Leu Asn Lys Glu Glu Arg Arg Lys Phe Ile Ser Gly Phe Gln  
 245 250 255

Ser

<210> 2121

<211> 257

<212> PRT

<213> Homo sapiens

<400> 2121

Met Asp Phe Ile Gln His Leu Gly Val Cys Cys Leu Val Ala Leu Ile  
 1 5 10 15  
 Ser Val Gly Leu Leu Ser Val Ala Ala Cys Trp Phe Leu Pro Ser Ile  
 20 25 30  
 Ile Ala Ala Ala Ala Ser Trp Ile Ile Thr Cys Val Leu Leu Cys Cys  
 35 40 45



Ser Lys His Ala Arg Cys Phe Ile Leu Leu Val Phe Leu Ser Cys Gly  
     50                    55                    60  
 Leu Arg Glu Gly Arg Asn Ala Leu Ile Ala Ala Gly Thr Gly Ile Val  
     65                    70                    75                    80  
 Ile Leu Gly His Val Glu Asn Ile Phe His Asn Phe Lys Gly Leu Leu  
                     85                    90                    95  
 Asp Gly Met Thr Cys Asn Leu Arg Ala Lys Ser Phe Ser Ile His Phe  
                     100                    105                    110  
 Pro Leu Leu Lys Lys Tyr Ile Glu Ala Ile Gln Trp Ile Tyr Gly Leu  
                     115                    120                    125  
 Ala Thr Pro Leu Ser Val Phe Asp Asp Leu Val Ser Trp Asn Gln Thr  
                     130                    135                    140  
 Leu Ala Val Ser Leu Phe Ser Pro Ser His Val Leu Glu Ala Gln Leu  
     145                    150                    155                    160  
 Asn Asp Ser Lys Gly Glu Val Leu Ser Val Leu Tyr Gln Met Ala Thr  
                     165                    170                    175  
 Thr Thr Glu Val Leu Ser Ser Leu Gly Gln Lys Leu Leu Ala Phe Ala  
                     180                    185                    190  
 Gly Leu Ser Leu Val Leu Leu Gly Thr Gly Leu Phe Met Lys Arg Phe  
                     195                    200                    205  
 Leu Gly Pro Cys Gly Trp Lys Tyr Glu Asn Ile Tyr Ile Thr Arg Gln  
     210                    215                    220  
 Phe Val Gln Phe Asp Glu Arg Glu Arg His Gln Gln Arg Pro Cys Val  
     225                    230                    235                    240  
 Leu Pro Leu Asn Lys Glu Glu Arg Arg Lys Phe Ile Ser Gly Phe Gln  
                     245                    250                    255  
 Ser

&lt;210&gt; 2122

&lt;211&gt; 352

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (284)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2122

Met Asp Phe Ile Gln His Leu Gly Val Cys Cys Leu Val Ala Leu Ile  
     1                    5                    10                    15

Ser Val Gly Leu Leu Ser Val Ala Ala Cys Trp Phe Leu Pro Ser Ile  
                     20                    25                    30

Ile Ala Ala Ala Ala Ser Trp Ile Ile Thr Cys Val Leu Leu Cys Cys  
 35 40 45  
 Ser Lys His Ala Arg Cys Phe Ile Leu Leu Val Phe Leu Ser Cys Gly  
 50 55 60  
 Leu Arg Glu Gly Arg Asn Ala Leu Ile Ala Ala Gly Thr Gly Ile Val  
 65 70 75 80  
 Ile Leu Gly His Val Glu Asn Ile Phe His Asn Phe Lys Gly Leu Leu  
 85 90 95  
 Asp Gly Met Thr Cys Asn Leu Arg Ala Lys Ser Phe Ser Ile His Phe  
 100 105 110  
 Pro Leu Leu Lys Lys Tyr Ile Glu Ala Ile Gln Trp Ile Tyr Gly Leu  
 115 120 125  
 Ala Thr Pro Leu Ser Val Phe Asp Asp Leu Val Ser Trp Asn Gln Thr  
 130 135 140  
 Leu Ala Val Ser Leu Phe Ser Pro Ser His Val Leu Glu Ala Gln Leu  
 145 150 155 160  
 Asn Asp Ser Lys Gly Glu Val Leu Ser Val Leu Tyr Gln Met Ala Thr  
 165 170 175  
 Thr Thr Glu Val Leu Ser Ser Leu Gly Gln Lys Leu Leu Ala Phe Ala  
 180 185 190  
 Gly Leu Ser Leu Val Leu Leu Gly Thr Gly Leu Phe Met Lys Arg Phe  
 195 200 205  
 Leu Gly Pro Cys Gly Trp Lys Tyr Glu Asn Ile Tyr Ile Thr Arg Gln  
 210 215 220  
 Phe Val Gln Phe Asp Glu Arg Glu Arg His Gln Gln Arg Pro Cys Val  
 225 230 235 240  
 Leu Pro Leu Asn Lys Glu Glu Arg Arg Lys Tyr Val Ile Ile Pro Thr  
 245 250 255  
 Phe Trp Pro Thr Pro Lys Glu Arg Lys Asn Leu Gly Leu Phe Phe Leu  
 260 265 270  
 Pro Ile Leu Ile His Leu Cys Ile Trp Val Leu Xaa Ala Ala Val Asp  
 275 280 285  
 Tyr Leu Leu Tyr Arg Leu Ile Phe Ser Val Ser Lys Gln Phe Gln Ser  
 290 295 300  
 Leu Pro Gly Phe Glu Val His Leu Lys Leu His Gly Glu Lys Gln Gly  
 305 310 315 320  
 Thr Gln Asp Ile Ile His Asp Ser Ser Phe Asn Ile Ser Val Phe Glu  
 325 330 335  
 Pro Asn Cys Ile Pro Lys Pro Trp Gln Ala Leu Lys Leu Leu Ala His  
 340 345 350

&lt;210&gt; 2123

&lt;211&gt; 259

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2123

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Met Val Ser Cys Ser Ile Leu Ala Leu Thr His Leu Leu Phe Glu Phe
 1           5           10           15

Lys Gly Leu Met Gly Thr Ser Thr Val Glu Gln Leu Leu Glu Asn Val
      20           25           30

Cys Leu Leu Leu Ala Ser Arg Thr Arg Asp Val Val Lys Ser Ala Leu
      35           40           45

Gly Phe Ile Lys Val Ala Val Thr Val Met Asp Val Ala His Leu Ala
      50           55           60

Lys His Val Gln Leu Val Met Glu Ala Ile Gly Lys Leu Ser Asp Asp
      65           70           75           80

Met Arg Arg His Phe Arg Met Lys Leu Arg Asn Leu Phe Thr Lys Phe
      85           90           95

Ile Arg Lys Phe Gly Phe Glu Leu Val Lys Arg Leu Leu Pro Glu Glu
      100          105          110

Tyr His Arg Val Leu Val Asn Ile Arg Lys Ala Glu Ala Arg Ala Lys
      115          120          125

Arg His Arg Ala Leu Ser Gln Ala Ala Val Glu Glu Glu Glu Glu
      130          135          140

Glu Glu Glu Glu Glu Pro Ala Gln Gly Lys Gly Asp Ser Ile Glu Glu
      145          150          155          160

Ile Leu Ala Asp Ser Glu Asp Glu Glu Asp Asn Glu Glu Glu Glu Arg
      165          170          175

Ser Arg Gly Lys Glu Gln Arg Lys Leu Ala Arg Gln Arg Ser Arg Ala
      180          185          190

Trp Leu Lys Glu Gly Gly Gly Asp Glu Pro Leu Asn Phe Leu Asp Pro
      195          200          205

Lys Val Ala Gln Arg Val Leu Ala Thr Gln Pro Gly Pro Ala Gly Gln
      210          215          220

Glu Glu Gly Pro Gln Leu Gln Gly Glu Arg Arg Trp Pro Ala Asp His
      225          230          235          240

Lys Gly Gly Gly Arg Arg Gln Gln Asp Gly Gly Arg Gly Arg Cys Gln
      245          250          255

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Arg Arg Arg

<210> 2124  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens

<400> 2124  
 Met Leu Trp Leu Gly Thr Ser Leu Ile Phe Ser Ser Phe Ser Ala Ser  
     1                    5                    10                    15  
 Phe Asp Gly Val Pro Phe Leu Ser Ser Trp Leu Phe Trp Ser Ser Gly  
             20                    25                    30  
 Ser Ser Pro Asn Ser Leu Ile Pro Pro Phe  
             35                    40

<210> 2125  
 <211> 45  
 <212> PRT  
 <213> Homo sapiens

<400> 2125  
 Met Tyr Pro Pro Val Ala Pro Ser Phe Trp Gly Cys Val Cys Phe Phe  
     1                    5                    10                    15  
 Trp Ala Val Pro Leu Val Cys Cys Arg Asp Ser Trp Lys Gly Leu Ser  
             20                    25                    30  
 Leu Phe Val Gly Ser Gly Gly Leu Gly Leu Val Glu His  
             35                    40                    45

<210> 2126  
 <211> 54  
 <212> PRT  
 <213> Homo sapiens

<400> 2126  
 Met Trp Pro Phe Leu His Leu Leu Asn Met Pro Phe Thr Leu Thr Gln  
     1                    5                    10                    15  
 Val Val Ala Ser Pro Ser Ser Cys Ser Asn Trp Lys Pro Gln His Pro  
             20                    25                    30  
 Glu Met Pro Pro Pro Gln Ile His Cys Thr His Val Cys Leu Cys Met  
             35                    40                    45  
 Arg Val Cys Ala Arg Val  
             50

<210> 2127

&lt;211&gt; 136

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2127

Met Leu Met Leu Leu Thr Leu Leu Val Leu Gly Met Val Trp Val Ala  
 1 5 10 15

Ser Ala Ile Val Asp Lys Asn Lys Ala Asn Arg Glu Ser Leu Tyr Asp  
 20 25 30

Phe Trp Glu Tyr Tyr Leu Pro Tyr Leu Tyr Ser Cys Ile Ser Phe Leu  
 35 40 45

Gly Val Leu Leu Leu Leu Gly Glu Cys Thr Gly Ser Gly Arg Glu Trp  
 50 55 60

Ala Gly Ser Leu Asp Gln Ser Asn Gln Ala Arg Arg Lys Gly Asn Gly  
 65 70 75 80

Gly His Val Arg Glu Gly Val Glu Ser Arg Val Trp Gln Val Thr Gly  
 85 90 95

Ser Cys Pro Tyr Ser Val Tyr Ser Thr Gly Ser Arg Pro His Val Leu  
 100 105 110

Arg His Trp Glu Ala Ala Ser Gln Ala Pro Ala Ala Gly Arg Pro Gly  
 115 120 125

Gly Ala Ala Val Leu Leu Ser Leu  
 130 135

&lt;210&gt; 2128

&lt;211&gt; 74

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2128

Met His Trp Thr Phe Ser Ser Ser Leu Gly Cys Leu Tyr His Phe Ser  
 1 5 10 15

Leu Ser Phe Ser Gly Leu His Thr Val Leu Lys Ser Ser Pro Ser Ser  
 20 25 30

Arg Phe Leu Leu Pro Cys Ser Ser Gln Val Thr Gln Pro Ser Pro Val  
 35 40 45

Gly Gln Pro Arg Leu Val Val Gln Leu Pro Pro Val Lys Val Ile Gly  
 50 55 60

His Arg Thr Gly Gln Cys Arg Gly Pro Gly  
 65 70

&lt;210&gt; 2129

&lt;211&gt; 253

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2129

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Met Asp Asn Arg Phe Ala Thr Ala Phe Val Ile Ala Cys Val Leu Ser
  1           5           10           15

Leu Ile Ser Thr Ile Tyr Met Ala Ala Ser Ile Gly Thr Asp Phe Trp
      20           25           30

Tyr Glu Tyr Arg Ser Pro Val Gln Glu Asn Ser Ser Asp Leu Asn Lys
      35           40           45

Ser Ile Trp Asp Glu Phe Ile Ser Asp Glu Ala Asp Glu Lys Thr Tyr
      50           55           60

Asn Asp Ala Leu Phe Arg Tyr Asn Gly Thr Val Gly Leu Trp Arg Arg
      65           70           75           80

Cys Ile Thr Ile Pro Lys Asn Met His Trp Tyr Ser Pro Pro Glu Arg
      85           90           95

Thr Glu Ser Phe Asp Val Val Thr Lys Cys Val Ser Phe Thr Leu Thr
      100          105          110

Glu Gln Phe Met Glu Lys Phe Val Asp Pro Gly Asn His Asn Ser Gly
      115          120          125

Ile Asp Leu Leu Arg Thr Tyr Leu Trp Arg Cys Gln Phe Leu Leu Pro
      130          135          140

Phe Val Ser Leu Gly Leu Met Cys Phe Gly Ala Leu Ile Gly Leu Cys
      145          150          155          160

Ala Cys Ile Cys Arg Ser Leu Tyr Pro Thr Ile Ala Thr Gly Ile Leu
      165          170          175

His Leu Leu Ala Gly Leu Cys Thr Leu Gly Ser Val Ser Cys Tyr Val
      180          185          190

Ala Gly Ile Glu Leu Leu His Gln Lys Leu Glu Leu Pro Asp Asn Val
      195          200          205

Ser Gly Glu Phe Gly Trp Ser Phe Cys Leu Ala Cys Val Ser Ala Pro
      210          215          220

Leu Gln Phe Met Ala Ser Ala Leu Phe Ile Trp Ala Ala His Thr Asn
      225          230          235          240

Arg Lys Glu Tyr Thr Leu Met Lys Ala Tyr Arg Val Ala
      245          250

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&lt;210&gt; 2130

&lt;211&gt; 253

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2130

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Met Asp Asn Arg Phe Ala Thr Ala Phe Val Ile Ala Cys Val Leu Ser

```

1	5	10	15
Leu Ile Ser Thr 20	Ile Tyr Met Ala 25	Ala Ser Ile Gly Thr 30	Asp Phe Trp
Tyr Glu Tyr Arg 35	Ser Pro Val Gln 40	Glu Asn Ser Ser 45	Asp Leu Asn Lys
Ser Ile Trp Asp 50	Glu Phe Ile Ser 55	Asp Glu Ala Asp 60	Glu Lys Thr Tyr
Asn Asp Ala Leu 65	Phe Arg Tyr Asn 70	Gly Thr Val Gly 75	Leu Trp Arg Arg 80
Cys Ile Thr Ile 85	Pro Lys Asn Met 90	His Trp Tyr Ser 95	Pro Pro Glu Arg
Thr Glu Ser Phe 100	Asp Val Val Thr 105	Lys Cys Val Ser 110	Phe Thr Leu Thr
Glu Gln Phe Met 115	Glu Lys Phe Val 120	Asp Pro Gly Asn 125	His Asn Ser Gly
Ile Asp Leu Leu 130	Arg Thr Tyr Leu 135	Trp Arg Cys Gln 140	Phe Leu Leu Pro
Phe Val Ser Leu 145	Gly Leu Met Cys 150	Phe Gly Ala Leu 155	Ile Gly Leu Cys 160
Ala Cys Ile Cys 165	Arg Ser Leu Tyr 170	Pro Thr Ile Ala 175	Thr Gly Ile Leu
His Leu Leu Ala 180	Gly Leu Cys Thr 185	Leu Gly Ser Val 190	Ser Cys Tyr Val
Ala Gly Ile Glu 195	Leu Leu His Gln 200	Lys Leu Glu Leu 205	Pro Asp Asn Val
Ser Gly Glu Phe 210	Gly Trp Ser Phe 215	Cys Leu Ala Cys 220	Val Ser Ala Pro
Leu Gln Phe Met 225	Ala Ser Ala Leu 230	Phe Ile Trp Ala 235	Ala His Thr Asn 240
Arg Lys Glu Tyr 245	Thr Leu Met Lys 250	Ala Tyr Arg Val 255	Ala

&lt;210&gt; 2131

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2131

Met Phe Phe Gln 1	Gly Trp Val Asp 5	Arg Trp Leu Leu 10	Gly Cys Leu Ala 15
Pro Gly Gly Phe 20	Ala Ile His Glu 25	Ala Arg Ala Gly 30	Asn Thr Val Ser

Leu Pro Met Val Asp Pro Cys Glu Cys Gln Glu Ala Ser Ser Ser Val  
35 40 45

Leu Glu Met Ile Ser Ala Thr Ile Leu  
50 55

<210> 2132

<211> 41

<212> PRT

<213> Homo sapiens

<400> 2132

Met Asn Leu Met Val Arg Leu Leu Ala Leu Gly Leu Ile Ser Gly Met  
1 5 10 15

Met Ser Asn Ile Thr Gln Ser His Ser Ser Lys Ile Ser Ala Phe Gly  
20 25 30

Ile Phe Ile Gly Pro Glu Gln Phe Leu  
35 40

<210> 2133

<211> 51

<212> PRT

<213> Homo sapiens

<400> 2133

Met Ser Leu Glu Pro Ser Thr Ser Ser Phe Asn Ile Leu Leu Phe Pro  
1 5 10 15

Ala Phe Leu Arg Val Phe Gly Trp Ala Leu Gly Trp Met Pro Trp Glu  
20 . 25 30

Tyr Leu Tyr Leu Ser Ser Lys Val Thr Asn Gly Glu Thr Gly Thr Gln  
35 40 45

Arg Gly Thr  
50

<210> 2134

<211> 60

&lt;212&gt; PRT

<213> Homo sapiens

<220>

&lt;221&gt; SITE

$\langle 222 \rangle$  (10)

<223> Xaa equals any of the naturally occurring L-amino acids

 $\langle 220 \rangle$ 

<221> SITE

<222> (42)

<223> Xaa equals any of the naturally occurring L-amino acids



&lt;400&gt; 2134

Met Phe Phe Pro Cys Leu Pro Thr Leu Xaa Leu Arg Ile Leu His Ser  
 1 5 10 15

Gly Trp Val Gly Leu Phe Leu Leu Ile Ser Ser Arg Ala Pro Ser Ser  
 20 25 30

Ser Leu Ala Trp Lys His Gly Pro Gly Xaa Leu Trp Trp Pro Arg Arg  
 35 40 45

Pro Leu Arg Ser Cys Thr Gly Leu Ala Ser Cys Gly  
 50 55 60

&lt;210&gt; 2135

&lt;211&gt; 60

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (10)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (48)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2135

Met Phe Phe Pro Cys Leu Pro Thr Leu Xaa Leu Arg Ile Leu His Ser  
 1 5 10 15

Gly Trp Val Gly Leu Phe Leu Leu Ile Ser Ser Arg Ala Pro Ser Ser  
 20 25 30

Ser Leu Ala Trp Lys His Gly Pro Gly Glu Leu Trp Trp Pro Arg Xaa  
 35 40 45

Pro Leu Arg Ser Cys Thr Gly Leu Ala Ser Cys Gly  
 50 55 60

&lt;210&gt; 2136

&lt;211&gt; 78

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2136

Met Ser Pro His Gln Pro Met Gln Val Ser Ser Ser Lys Thr Ile Leu  
 1 5 10 15

Trp Leu Val Leu Ser Cys Leu Cys Pro Ser Ser Pro His Pro Val Ile  
 20 25 30

Ser Gly Leu Pro Gln Trp Tyr Ile Gly Val Leu Ala Gly Ile Val Pro  
 35 40 45

Val Ala Pro Ile Arg Pro Gly Asp Ser Gly Leu Asp Leu Gln Arg Glu  
 50 55 60

Gly Pro Gln Pro Ile Leu Ser Gln Gly Leu Asn Arg Arg Thr  
 65 70 75

<210> 2137

<211> 78

<212> PRT

<213> Homo sapiens

<400> 2137

Met Ser Pro His Gln Pro Met Gln Val Ser Ser Ser Lys Thr Ile Leu  
 1 5 10 15

Trp Leu Val Leu Ser Cys Leu Cys Pro Ser Ser Pro His Pro Val Ile  
 20 25 30

Ser Gly Leu Pro Gln Trp Tyr Ile Gly Val Leu Ala Gly Ile Val Pro  
 35 40 45

Val Ala Pro Ile Arg Pro Gly Asp Ser Gly Leu Asp Leu Gln Arg Glu  
 50 55 60

Gly Pro Gln Pro Ile Leu Ser Gln Gly Leu Asn Arg Arg Thr  
 65 70 75

<210> 2138

<211> 144

<212> PRT

<213> Homo sapiens

<400> 2138

Met Ser Ala Val Ser Ala Pro Ala Leu Trp Gln Thr Trp Cys Val Pro  
 1 5 10 15

Ala Ala Arg Ala Trp Thr Ser Ser Thr Leu Arg His Asp Ala Val Ala  
 20 25 30

Arg Pro Asn Pro Ser Thr Ser Leu Thr Pro Gly Leu Leu Thr Ser Ser  
 35 40 45

Asp Ser Pro Arg Trp Pro Gly Leu Gln Glu Ala Pro Gly Arg Pro Cys  
 50 55 60

Ile Arg Leu Gly Arg Ser Glu Leu Cys Met Tyr Ile Tyr Thr Tyr Ile  
 65 70 75 80

Asp Thr Phe Ile Ile Tyr Thr His Ser Leu Tyr Ile Tyr Ile His Cys  
 85 90 95

Phe Leu Ala Pro Glu Leu Ile Trp Val Gln Ala His Phe Lys Thr Leu  
 100 105 110

Pro Gly Gly Gly Cys Phe Phe Ser Gly Phe Leu Ala Arg Glu Glu Gly

115						120						125			
Glu Gly Thr Gly Trp Val Phe Ser Leu Lys Arg Glu Ser Arg Arg Phe															
130						135				140					

<210> 2139  
 <211> 151  
 <212> PRT  
 <213> Homo sapiens

<400> 2139  
 Met Leu His Trp Val Leu Ser Phe Phe Phe Leu Leu Ser Cys Pro Arg  
 1 5 10 15  
 Thr Glu Gly Leu Pro Gly Leu Tyr Cys Pro Gly Cys Ser Gln Cys Pro  
 20 25 30  
 Gly Arg Gly Met Trp Pro Gly Asp Pro Gly Pro Gly Ile Gln Gly Pro  
 35 40 45  
 Gly Leu Asp Leu Arg Thr Gly Met Glu Ala Thr Gly Ala Gln Gln Pro  
 50 55 60  
 Thr Leu Ser Ser Pro His Cys Leu Leu Ser Leu Pro Thr Leu Pro Ala  
 65 70 75 80  
 Arg Ala Val Gln Leu Arg Trp Asp Leu Ser Ile Ser Arg Ala Gly Gly  
 85 90 95  
 Arg Val Ala Val Leu Gly Leu Cys Leu Glu Pro Gly Gly Ser Leu Leu  
 100 105 110  
 Leu Pro Pro Ser Ala Leu Pro Glu Thr Asp Pro Cys Ala Ala Cys Pro  
 115 120 125  
 Pro Cys Pro Phe Val Pro Met Ser Gly Gly Gly Gly Arg Pro Thr Val  
 130 135 140  
 Pro Glu Ala Gly His Gln Pro  
 145 150

<210> 2140  
 <211> 173  
 <212> PRT  
 <213> Homo sapiens

<400> 2140  
 Met Pro Pro Tyr Thr Pro Phe Phe Gly Thr Arg Ala Leu Leu Ser Val  
 1 5 10 15  
 Ser Leu Pro Pro Pro Cys Met Leu His Trp Val Leu Ser Phe Phe Phe  
 20 25 30

Leu	Leu	Ser	Cys	Pro	Arg	Thr	Glu	Gly	Leu	Pro	Gly	Leu	Tyr	Cys	Pro
		35					40					45			
Gly	Cys	Ser	Gln	Cys	Pro	Gly	Arg	Gly	Met	Trp	Pro	Gly	Asp	Pro	Gly
	50					55					60				
Pro	Gly	Ile	Gln	Gly	Pro	Gly	Leu	Asp	Leu	Arg	Thr	Gly	Met	Glu	Ala
65					70					75					80
Thr	Gly	Ala	Gln	Gln	Pro	Thr	Leu	Ser	Ser	Pro	His	Cys	Leu	Leu	Ser
				85					90					95	
Leu	Pro	Thr	Leu	Pro	Ala	Arg	Ala	Val	Gln	Leu	Arg	Trp	Asp	Leu	Ser
			100					105					110		
Ile	Ser	Arg	Ala	Gly	Gly	Arg	Val	Ala	Val	Leu	Gly	Leu	Cys	Leu	Glu
		115					120					125			
Pro	Gly	Gly	Ser	Leu	Leu	Leu	Pro	Pro	Ser	Ala	Leu	Pro	Glu	Thr	Asp
	130					135					140				
Pro	Cys	Ala	Ala	Cys	Pro	Pro	Cys	Pro	Phe	Val	Pro	Met	Ser	Gly	Gly
145					150					155					160
Gly	Gly	Arg	Pro	Thr	Val	Pro	Glu	Ala	Gly	His	Gln	Pro			
				165					170						

```
<210> 2141
<211> 82
<212> PRT
<213> Homo sapiens
```

```

<400> 2141
Met Asn Arg Ser Thr Arg Ser Tyr Arg Cys Trp Ala Thr Trp Pro Arg
  1                      5                      10                      15
Leu Gly Trp Ala Leu Pro Cys Cys Met Asn Ser Leu Arg Lys Gly Arg
                20                      25                      30
Lys Phe Ser Gln Ile Thr Thr Ser Leu Met Ala Ser Val Ser Ser Ala
          35                      40                      45
Ser Met Val Ser Arg Arg Arg Arg Pro Leu Pro Lys His Pro Val Thr
  50                      55                      60
Thr Thr Ser Thr Ala Thr Ala Leu Leu Gly Thr Ser Ser Thr Trp Ser
  65                      70                      75                      80
Lys Ser

```

```
<210> 2142
<211> 53
<212> PRT
<213> Homo sapiens
```

&lt;400&gt; 2142

Met Gly Gln Arg Gly Val Phe Leu Leu Ile Leu Asp Ala Phe Ser Val  
 1 5 10 15

Pro Ser Thr Ala Ser Cys Leu Ile Thr Pro Leu Pro Pro Pro His Pro  
 20 25 30

Gln Pro Ser Gln Phe Phe Leu Ala Ser Ala Leu Gln Pro Tyr Leu Gly  
 35 40 45

Lys Glu Glu Trp Val  
 50

&lt;210&gt; 2143

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2143

Met Gly Gln Arg Gly Val Phe Leu Leu Ile Leu Asp Ala Phe Ser Val  
 1 5 10 15

Pro Ser Thr Ala Ser Cys Leu Ile Thr Pro Leu Pro Pro Pro His Pro  
 20 25 30

Gln Pro Ser Gln Phe Phe Leu Ala Ser Ala Leu Gln Pro Tyr Leu Gly  
 35 40 45

Lys Glu Glu Trp Val  
 50

&lt;210&gt; 2144

&lt;211&gt; 53

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2144

Met Gly Gln Arg Gly Val Phe Leu Leu Ile Leu Asp Ala Phe Ser Val  
 1 5 10 15

Pro Ser Thr Ala Ser Cys Leu Ile Thr Pro Leu Pro Pro Pro His Pro  
 20 25 30

Gln Pro Ser Gln Phe Phe Leu Ala Ser Ala Leu Gln Pro Tyr Leu Gly  
 35 40 45

Lys Glu Glu Trp Val  
 50

&lt;210&gt; 2145

&lt;211&gt; 97

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2145

```

Met Leu Trp Lys Leu Lys Leu Ser Arg Cys Trp Leu Asp Leu Thr Leu
 1             5             10             15
Leu Ile Phe Ser Gln Ile Ser His Met Asp Gln Ile Ile Phe Phe Phe
             20             25             30
Val Val Tyr Pro Ile Leu Asn Asn Ile Phe Ser Leu Asn Tyr Cys Arg
             35             40             45
Asp Phe Phe Cys Gly Gly Tyr Phe Leu Phe Cys Ser Lys Ile Ile Arg
             50             55             60
Cys Lys Ala Ile Leu Cys Leu Thr Val Ala Leu Ser Lys Gln Leu Cys
             65             70             75             80
Ser Gly Val Ala Phe Asp Val Leu Glu Phe Asp Tyr Met Gln Ser Cys
             85             90             95

```

Ile

&lt;210&gt; 2146

&lt;211&gt; 122

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (63)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (99)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (122)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2146

```

Met Met Thr Met Thr Ser Asp Arg Trp Phe Ser Met Ala Trp Ala Ser
 1             5             10             15
Cys Ser Leu Ser Arg Pro Pro Leu Thr Pro Ser Cys Ser Cys Gln Gln
             20             25             30
Pro Ala Thr Val Ala Leu Leu Leu Gln Thr Ile Ser Val Cys Ser Ala
             35             40             45
Gln Gln Ala Asp Pro Leu Ser Pro Pro Arg Ala Cys Arg Pro Xaa Arg
             50             55             60
Gln Phe Pro Val Leu Gln Ser Ala Gly Pro Pro His Ser Pro His Val
             65             70             75             80

```

Tyr Ala Phe Val Leu Phe Pro Val Ser Ser Arg Trp Gln Gly Gly Asp  
                             85                            90                            95  
 Phe Cys Xaa Ile Cys Cys Cys Phe Pro Gln Cys Leu Gly Arg Cys Leu  
                             100                            105                            110  
 Glu His Thr Arg Cys Ser Ile Asn Pro Xaa  
                             115                            120

<210> 2147  
 <211> 99  
 <212> PRT  
 <213> Homo sapiens

<400> 2147  
 Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser  
     1                            5                            10                            15  
 Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys  
                             20                            25                            30  
 Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys  
                             35                            40                            45  
 Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln  
                             50                            55                            60  
 Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly  
                             65                            70                            75                            80  
 Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Arg Ser Pro Trp His  
                             85                            90                            95  
 Pro Gly Asn

<210> 2148  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 2148  
 Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser  
     1                            5                            10                            15  
 Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys  
                             20                            25                            30  
 Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys  
                             35                            40                            45  
 Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln  
                             50                            55                            60  
 Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly  
                             65                            70                            75                            80

Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile  
                             85                            90                            95  
 Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln  
                             100                            105                            110  
 Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly  
                             115                            120                            125  
 Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr  
                             130                            135                            140  
 Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr  
                             145                            150                            155                            160  
 Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val  
                             165                            170                            175  
 Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr  
                             180                            185                            190  
 Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln  
                             195                            200                            205  
 Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly  
                             210                            215                            220  
 His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu  
                             225                            230                            235                            240  
 Ile Phe Pro Ser Ala  
                             245

<210> 2149  
 <211> 57  
 <212> PRT  
 <213> Homo sapiens

<400> 2149  
 Met Gly His Leu His Trp Gly Val Ser Gly Asn Phe Phe Phe Pro Arg  
   1                            5                            10                            15  
 Leu Ser Leu Phe Leu Leu Phe Ala Trp Leu Gln Ile Thr Gln Ala Asn  
                             20                            25                            30  
 Glu Pro Arg Leu Pro Gly Lys Tyr Ser Ile Lys Ala Ile Lys Ile Thr  
                             35                            40                            45  
 Ile Cys Ile Thr Phe Arg Thr Ser Ala  
                             50                            55

<210> 2150  
 <211> 152  
 <212> PRT  
 <213> Homo sapiens



&lt;400&gt; 2150

```

Met Gly Val His Val Gly Ala Ala Leu Gly Ala Leu Trp Phe Cys Leu
 1           5           10           15

Thr Gly Ala Leu Glu Val Gln Val Pro Glu Asp Pro Val Val Ala Leu
          20           25           30

Val Gly Thr Asp Ala Thr Leu Cys Cys Ser Phe Ser Pro Glu Pro Gly
          35           40           45

Phe Ser Leu Ala Gln Leu Asn Leu Ile Trp Gln Leu Thr Asp Thr Lys
          50           55           60

Gln Leu Val His Ser Phe Ala Glu Gly Gln Asp Gln Gly Ser Ala Tyr
          65           70           75           80

Ala Asn Arg Thr Ala Leu Phe Leu Asp Leu Leu Ala Gln Gly Asn Ala
          85           90           95

Ser Leu Arg Leu Gln Ser Val Arg Val Ala Asp Glu Gly Gln Leu His
          100          105          110

Leu Leu Arg Glu His Pro Gly Phe Arg Gln Arg Cys Arg Gln Pro Ala
          115          120          125

Gly Gly Arg Ser Leu Leu Glu Ala Gln His Asp Pro Gly Ala Gln Gln
          130          135          140

Gly Pro Ala Ala Arg Gly Thr Trp
145           150

```

&lt;210&gt; 2151

&lt;211&gt; 302

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (128)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2151

```

Met Arg Leu Gly Ser Pro Gly Leu Leu Phe Leu Leu Phe Ser Ser Leu
 1           5           10           15

Arg Ala Asp Thr Gln Glu Lys Glu Val Arg Ala Met Val Gly Ser Asp
          20           25           30

Val Glu Leu Ser Cys Ala Cys Pro Glu Gly Ser Arg Phe Asp Leu Asn
          35           40           45

Asp Val Tyr Val Tyr Trp Gln Thr Ser Glu Ser Lys Thr Val Val Thr
          50           55           60

Tyr His Ile Pro Gln Asn Ser Ser Leu Glu Asn Val Asp Ser Arg Tyr
          65           70           75           80

```

Arg Asn Arg Ala Leu Met Ser Pro Ala Gly Met Leu Arg Gly Asp Phe  
                     85                    90                    95  
 Ser Leu Arg Leu Phe Asn Val Thr Pro Gln Asp Glu Gln Lys Phe His  
                     100                    105                    110  
 Cys Leu Val Leu Ser Gln Ser Leu Gly Phe Gln Glu Val Leu Ser Xaa  
                     115                    120                    125  
 Glu Val Thr Leu His Val Ala Ala Asn Phe Ser Val Pro Val Val Ser  
                     130                    135                    140  
 Ala Pro His Ser Pro Ser Gln Asp Glu Leu Thr Phe Thr Cys Thr Ser  
                     145                    150                    155                    160  
 Ile Asn Gly Tyr Pro Arg Pro Asn Val Tyr Trp Ile Asn Lys Thr Asp  
                     165                    170                    175  
 Asn Ser Leu Leu Asp Gln Ala Leu Gln Asn Asp Thr Val Phe Leu Asn  
                     180                    185                    190  
 Met Arg Gly Leu Tyr Asp Val Val Ser Val Leu Arg Ile Ala Arg Thr  
                     195                    200                    205  
 Pro Ser Val Asn Ile Gly Cys Cys Ile Glu Asn Val Leu Leu Gln Gln  
                     210                    215                    220  
 Asn Leu Thr Val Gly Ser Gln Thr Gly Asn Asp Ile Gly Glu Arg Asp  
                     225                    230                    235                    240  
 Lys Ile Thr Glu Asn Pro Val Ser Thr Gly Glu Lys Asn Ala Ala Thr  
                     245                    250                    255  
 Trp Ser Ile Leu Ala Val Leu Cys Leu Leu Val Val Val Ala Val Ala  
                     260                    265                    270  
 Ile Gly Trp Val Cys Arg Asp Arg Cys Leu Gln His Ser Tyr Ala Gly  
                     275                    280                    285  
 Ala Trp Ala Val Ser Pro Glu Thr Glu Leu Thr Gly His Val  
                     290                    295                    300

&lt;210&gt; 2152

&lt;211&gt; 316

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2152

Met Leu Arg Arg Arg Gly Ser Pro Gly Met Gly Val His Val Gly Ala  
     1                    5                    10                    15  
 Ala Leu Gly Ala Leu Trp Phe Cys Leu Thr Gly Ala Leu Glu Val Gln  
                     20                    25                    30  
 Val Pro Glu Asp Pro Val Val Ala Leu Val Gly Thr Asp Ala Thr Leu  
                     35                    40                    45  
 Cys Cys Ser Phe Ser Pro Glu Pro Gly Phe Ser Leu Ala Gln Leu Asn

50                      55                      60  
 Leu Ile Trp Gln Leu Thr Asp Thr Lys Gln Leu Val His Ser Phe Ala  
 65                      70                      75                      80  
 Glu Gly Gln Asp Gln Gly Ser Ala Tyr Ala Asn Arg Thr Ala Leu Phe  
 85                      90                      95  
 Pro Asp Leu Leu Ala Gln Gly Asn Ala Ser Leu Arg Leu Gln Arg Val  
 100                      105                      110  
 Arg Val Ala Asp Glu Gly Ser Phe Thr Cys Phe Val Ser Ile Arg Asp  
 115                      120                      125  
 Phe Gly Ser Ala Ala Val Ser Leu Gln Val Ala Ala Pro Tyr Ser Lys  
 130                      135                      140  
 Pro Ser Met Thr Leu Glu Pro Asn Lys Asp Leu Arg Pro Gly Asp Thr  
 145                      150                      155                      160  
 Val Thr Ile Thr Cys Ser Ser Tyr Gln Gly Tyr Pro Glu Ala Glu Val  
 165                      170                      175  
 Phe Trp Gln Asp Gly Gln Gly Val Pro Leu Thr Gly Asn Val Thr Thr  
 180                      185                      190  
 Ser Gln Met Ala Asn Glu Gln Gly Leu Phe Asp Val His Ser Ile Leu  
 195                      200                      205  
 Arg Val Val Leu Gly Ala Asn Gly Thr Tyr Ser Cys Leu Val Arg Asn  
 210                      215                      220  
 Pro Val Leu Gln Gln Asp Ala His Ser Ser Val Thr Ile Thr Gly Gln  
 225                      230                      235                      240  
 Pro Met Thr Phe Pro Pro Glu Ala Leu Trp Val Thr Val Gly Leu Ser  
 245                      250                      255  
 Val Cys Leu Ile Ala Leu Leu Val Ala Leu Ala Phe Val Cys Trp Arg  
 260                      265                      270  
 Lys Ile Lys Gln Ser Cys Glu Glu Glu Asn Ala Gly Ala Glu Asp Gln  
 275                      280                      285  
 Asp Gly Glu Gly Glu Gly Ser Lys Thr Ala Leu Gln Pro Leu Lys His  
 290                      295                      300  
 Ser Asp Ser Lys Glu Asp Asp Gly Gln Glu Ile Ala  
 305                      310                      315

&lt;210&gt; 2153

&lt;211&gt; 831

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2153

Met Lys Val His Met His Thr Lys Phe Cys Leu Ile Cys Leu Leu Thr  
 1                      5                      10                      15

Phe Ile Phe His His Cys Asn His Cys His Glu Glu His Asp His Gly  
                   20                                  25                                  30  
 Pro Glu Ala Leu His Arg Gln His Arg Gly Met Thr Glu Leu Glu Pro  
                   35                                  40                                  45  
 Ser Lys Phe Ser Lys Gln Ala Ala Glu Asn Glu Lys Lys Tyr Tyr Ile  
                   50                                  55                                  60  
 Glu Lys Leu Phe Glu Arg Tyr Gly Glu Asn Gly Arg Leu Ser Phe Phe  
                   65                                  70                                  75                                  80  
 Gly Leu Glu Lys Leu Leu Thr Asn Leu Gly Leu Gly Glu Arg Lys Val  
                                   85                                  90                                  95  
 Val Glu Ile Asn His Glu Asp Leu Gly His Asp His Val Ser His Leu  
                                   100                                  105                                  110  
 Asp Ile Leu Ala Val Gln Glu Gly Lys His Phe His Ser His Asn His  
                   115                                  120                                  125  
 Gln His Ser His Asn His Leu Asn Ser Glu Asn Gln Thr Val Thr Ser  
                   130                                  135                                  140  
 Val Ser Thr Lys Arg Asn His Lys Cys Asp Pro Glu Lys Glu Thr Val  
                   145                                  150                                  155                                  160  
 Glu Val Ser Val Lys Ser Asp Asp Lys His Met His Asp His Asn His  
                                   165                                  170                                  175  
 Arg Leu Arg His His His Arg Leu His His His Leu Asp His Asn Asn  
                   180                                  185                                  190  
 Thr His His Phe His Asn Asp Ser Ile Thr Pro Ser Glu Arg Gly Glu  
                   195                                  200                                  205  
 Pro Ser Asn Glu Pro Ser Thr Glu Thr Asn Lys Thr Gln Glu Gln Ser  
                   210                                  215                                  220  
 Asp Val Lys Leu Pro Lys Gly Lys Arg Lys Lys Lys Gly Arg Lys Ser  
                   225                                  230                                  235                                  240  
 Asn Glu Asn Ser Glu Val Ile Thr Pro Gly Phe Pro Pro Asn His Asp  
                                   245                                  250                                  255  
 Gln Gly Glu Gln Tyr Glu His Asn Arg Val His Lys Pro Asp Arg Val  
                                   260                                  265                                  270  
 His Asn Pro Gly His Ser His Val His Leu Pro Glu Arg Asn Gly His  
                   275                                  280                                  285  
 Asp Pro Gly Arg Gly His Gln Asp Leu Asp Pro Asp Asn Glu Gly Glu  
                   290                                  295                                  300  
 Leu Arg His Thr Arg Lys Arg Glu Ala Pro His Val Lys Asn Asn Ala  
                   305                                  310                                  315                                  320  
 Ile Ile Ser Leu Arg Lys Asp Leu Asn Glu Asp Asp His His His Glu  
                                   325                                  330                                  335

Cys Leu Asn Val Thr Gln Leu Leu Lys Tyr Tyr Gly His Gly Ala Asn  
 340 345 350  
 Ser Pro Ile Ser Thr Asp Leu Phe Thr Tyr Leu Cys Pro Ala Leu Leu  
 355 360 365  
 Tyr Gln Ile Asp Ser Arg Leu Cys Ile Glu His Phe Asp Lys Leu Leu  
 370 375 380  
 Val Glu Asp Ile Asn Lys Asp Lys Asn Leu Val Pro Glu Asp Glu Ala  
 385 390 395 400  
 Asn Ile Gly Ala Ser Ala Trp Ile Cys Gly Ile Ile Ser Ile Thr Val  
 405 410 415  
 Ile Ser Leu Leu Ser Leu Leu Gly Val Ile Leu Val Pro Ile Ile Asn  
 420 425 430  
 Gln Gly Cys Phe Lys Phe Leu Leu Thr Phe Leu Val Ala Leu Ala Val  
 435 440 445  
 Gly Thr Met Ser Gly Asp Ala Leu Leu His Leu Leu Pro His Ser Gln  
 450 455 460  
 Gly Gly His Asp His Ser His Gln His Ala His Gly His Gly His Ser  
 465 470 475 480  
 His Gly His Glu Ser Asn Lys Phe Leu Glu Glu Tyr Asp Ala Val Leu  
 485 490 495  
 Lys Gly Leu Val Ala Leu Gly Gly Ile Tyr Leu Leu Phe Ile Ile Glu  
 500 505 510  
 His Cys Ile Arg Met Phe Lys His Tyr Lys Gln Gln Arg Gly Lys Gln  
 515 520 525  
 Lys Trp Phe Met Lys Gln Asn Thr Glu Glu Ser Thr Ile Gly Arg Lys  
 530 535 540  
 Leu Ser Asp His Lys Leu Asn Asn Thr Pro Asp Ser Asp Trp Leu Gln  
 545 550 555 560  
 Leu Lys Pro Leu Ala Gly Thr Asp Asp Ser Val Val Ser Glu Asp Arg  
 565 570 575  
 Leu Asn Glu Thr Glu Leu Thr Asp Leu Glu Gly Gln Gln Glu Ser Pro  
 580 585 590  
 Pro Lys Asn Tyr Leu Cys Ile Glu Glu Glu Lys Ile Ile Asp His Ser  
 595 600 605  
 His Ser Asp Gly Leu His Thr Ile His Glu His Asp Leu His Ala Ala  
 610 615 620  
 Ala His Asn His His Gly Glu Asn Lys Thr Val Leu Arg Lys His Asn  
 625 630 635 640  
 His Gln Trp His His Lys His Ser His His Ser His Gly Pro Cys His  
 645 650 655

Ser Gly Ser Asp Leu Lys Glu Thr Gly Ile Ala Asn Ile Ala Trp Met  
 660 665 670  
 Val Ile Met Gly Asp Gly Ile His Asn Phe Ser Asp Gly Leu Ala Ile  
 675 680 685  
 Gly Ala Ala Phe Ser Ala Gly Leu Thr Gly Gly Ile Ser Thr Ser Ile  
 690 695 700  
 Ala Val Phe Cys His Glu Leu Pro His Glu Leu Gly Asp Phe Ala Val  
 705 710 715 720  
 Leu Leu Lys Ala Gly Met Thr Val Lys Gln Ala Ile Val Tyr Asn Leu  
 725 730 735  
 Leu Ser Ala Met Met Ala Tyr Ile Gly Met Leu Ile Gly Thr Ala Val  
 740 745 750  
 Gly Gln Tyr Ala Asn Asn Ile Thr Leu Trp Ile Phe Ala Val Thr Ala  
 755 760 765  
 Gly Met Phe Leu Tyr Val Ala Leu Val Asp Met Leu Pro Glu Met Leu  
 770 775 780  
 His Gly Asp Gly Asp Asn Glu Glu His Gly Phe Cys Pro Val Gly Gln  
 785 790 795 800  
 Phe Ile Leu Gln Asn Leu Gly Leu Leu Phe Gly Phe Ala Ile Met Leu  
 805 810 815  
 Val Ile Ala Leu Tyr Glu Asp Lys Ile Val Phe Asp Ile Gln Phe  
 820 825 830

&lt;210&gt; 2154

&lt;211&gt; 480

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2154

Met Leu Phe Arg Asn Arg Phe Leu Leu Leu Leu Ala Leu Ala Ala Leu  
 1 5 10 15  
 Leu Ala Phe Val Ser Leu Ser Leu Gln Phe Phe His Leu Ile Pro Val  
 20 25 30  
 Ser Thr Pro Lys Asn Gly Met Ser Ser Lys Ser Arg Lys Arg Ile Met  
 35 40 45  
 Pro Asp Pro Val Thr Glu Pro Pro Val Thr Asp Pro Val Tyr Glu Ala  
 50 55 60  
 Leu Leu Tyr Cys Asn Ile Pro Ser Val Ala Glu Arg Ser Met Glu Gly  
 65 70 75 80  
 His Ala Pro His His Phe Lys Leu Val Ser Val His Val Phe Ile Arg  
 85 90 95

His Gly Asp Arg Tyr Pro Leu Tyr Val Ile Pro Lys Thr Lys Arg Pro  
 100 105 110  
 Glu Ile Asp Cys Thr Leu Val Ala Asn Arg Lys Pro Tyr His Pro Lys  
 115 120 125  
 Leu Glu Ala Phe Ile Ser His Met Ser Lys Gly Ser Gly Ala Ser Phe  
 130 135 140  
 Glu Ser Pro Leu Asn Ser Leu Pro Leu Tyr Pro Asn His Pro Leu Cys  
 145 150 155 160  
 Glu Met Gly Glu Leu Thr Gln Thr Gly Val Val Gln His Leu Gln Asn  
 165 170 175  
 Gly Gln Leu Leu Arg Asp Ile Tyr Leu Lys Lys His Lys Leu Leu Pro  
 180 185 190  
 Asn Asp Trp Ser Ala Asp Gln Leu Tyr Leu Glu Thr Thr Gly Lys Ser  
 195 200 205  
 Arg Thr Leu Gln Ser Gly Leu Ala Leu Leu Tyr Gly Phe Leu Pro Asp  
 210 215 220  
 Phe Asp Trp Lys Lys Ile Tyr Phe Arg His Gln Pro Ser Ala Leu Phe  
 225 230 235 240  
 Cys Ser Gly Ser Cys Tyr Cys Pro Val Arg Asn Gln Tyr Leu Glu Lys  
 245 250 255  
 Glu Gln Arg Arg Gln Tyr Leu Leu Arg Leu Lys Asn Ser Gln Leu Glu  
 260 265 270  
 Lys Thr Tyr Gly Glu Met Ala Lys Ile Val Asp Val Pro Thr Lys Gln  
 275 280 285  
 Leu Arg Ala Ala Asn Pro Ile Asp Ser Met Leu Cys His Phe Cys His  
 290 295 300  
 Asn Val Ser Phe Pro Cys Thr Arg Asn Gly Cys Val Asp Met Glu His  
 305 310 315 320  
 Phe Lys Val Ile Lys Thr His Gln Ile Glu Asp Glu Arg Glu Arg Arg  
 325 330 335  
 Glu Lys Lys Leu Tyr Phe Gly Tyr Ser Leu Leu Gly Ala His Pro Ile  
 340 345 350  
 Leu Asn Gln Thr Ile Gly Arg Met Gln Arg Ala Thr Glu Gly Arg Lys  
 355 360 365  
 Glu Glu Leu Phe Ala Leu Tyr Ser Ala His Asp Val Thr Leu Ser Pro  
 370 375 380  
 Val Leu Ser Ala Leu Gly Leu Ser Glu Ala Arg Phe Pro Arg Phe Ala  
 385 390 395 400  
 Ala Arg Leu Ile Phe Glu Leu Trp Gln Asp Arg Glu Lys Pro Ser Glu  
 405 410 415

His Ser Val Arg Ile Leu Tyr Asn Gly Val Asp Val Thr Phe His Thr  
 420 425 430

Ser Phe Cys Gln Asp His His Lys Arg Ser Pro Lys Pro Met Cys Pro  
 435 440 445

Leu Glu Asn Leu Val Arg Phe Val Lys Arg Asp Met Phe Val Ala Leu  
 450 455 460

Gly Gly Ser Gly Thr Asn Tyr Tyr Asp Ala Cys His Arg Glu Gly Phe  
 465 470 475 480

<210> 2155  
 <211> 151  
 <212> PRT  
 <213> Homo sapiens

<400> 2155  
 Met Phe Leu Met Leu Gly Cys Ala Leu Pro Ile Tyr Asn Lys Tyr Trp  
 1 5 10 15

Pro Leu Phe Val Leu Phe Phe Tyr Ile Leu Ser Pro Ile Pro Tyr Cys  
 20 25 30

Ile Ala Arg Arg Leu Val Asp Asp Thr Asp Ala Met Ser Asn Ala Cys  
 35 40 45

Lys Glu Leu Ala Ile Phe Leu Thr Thr Gly Ile Val Val Ser Ala Phe  
 50 55 60

Gly Leu Pro Ile Val Phe Ala Arg Ala His Leu Met Gly Arg Leu Pro  
 65 70 75 80

Phe Phe Ser Lys Met Gly Thr Ala Glu Ser Glu Gly Arg Glu Thr Leu  
 85 90 95

Thr Gln Gln Leu Pro Leu Pro Ala Ala Ala Met Arg Arg Leu Leu Pro  
 100 105 110

Ala Ser Arg Val Ser Thr Gln Pro Val Leu Arg Leu Ala Asp Ser Ala  
 115 120 125

Glu Ser Leu Leu Gly Arg Pro Ala Leu Trp Ala Leu Gly Phe Leu Leu  
 130 135 140

Cys Pro Pro Ser Gln Ala Gln  
 145 150

<210> 2156  
 <211> 89  
 <212> PRT  
 <213> Homo sapiens



&lt;400&gt; 2156

Met Tyr Met Gln Asp Tyr Trp Arg Thr Trp Leu Lys Gly Leu Arg Gly  
 1 5 10 15

Phe Phe Phe Val Gly Val Leu Phe Ser Ala Val Ser Ile Ala Ala Phe  
 20 25 30

Cys Thr Phe Leu Val Leu Ala Ile Thr Arg His Gln Ser Leu Thr Asp  
 35 40 45

Pro Thr Ser Tyr Tyr Leu Ser Ser Val Trp Ser Phe Ile Ser Phe Lys  
 50 55 60

Trp Ala Phe Leu Leu Ser Leu Tyr Ala His Arg Tyr Arg Ala Asp Phe  
 65 70 75 80

Ala Asp Ile Ser Ile Leu Ser Asp Phe  
 85

&lt;210&gt; 2157

&lt;211&gt; 56

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2157

Met Arg Gly His Ile Thr Thr Leu Leu Thr Thr Ser Phe Leu Val Phe  
 1 5 10 15

Gly Leu His Ile Ile Phe Phe Leu Asn Ile Ser Cys Phe Asn Phe Arg  
 20 25 30

Val Phe Ile Leu Phe Glu Thr Arg Pro Glu Asp Ser Arg Leu Tyr Arg  
 35 40 45

Glu Arg Pro Val Leu Pro Arg Tyr  
 50 55

&lt;210&gt; 2158

&lt;211&gt; 50

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2158

Met Gln Val Lys Asn Ser Ile His Val Thr Phe Val Ala Arg Ile Leu  
 1 5 10 15

Val Arg Val Leu Ile Cys Leu Ser Thr Ser Glu Ala Ile Leu Ala Arg  
 20 25 30

Asn His Ile Tyr Val Val Ser Val Thr Asn Ala Ser Val Glu Val Gln  
 35 40 45

Thr Ser  
 50

&lt;210&gt; 2159

&lt;211&gt; 50

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2159

Met Gln Val Lys Asn Ser Ile His Val Thr Phe Val Ala Arg Ile Leu  
 1 5 10 15

Val Arg Val Leu Ile Cys Leu Ser Thr Ser Glu Ala Ile Leu Ala Arg  
 20 25 30

Asn His Ile Tyr Val Val Ser Val Thr Asn Ala Ser Val Glu Val Gln  
 35 40 45

Thr Ser  
 50

&lt;210&gt; 2160

&lt;211&gt; 81

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2160

Met Arg Leu Leu Val Leu Ser Ser Leu Leu Cys Ile Leu Leu Leu Cys  
 1 5 10 15

Phe Ser Ile Phe Ser Thr Glu Gly Lys Arg Arg Pro Ala Lys Ala Trp  
 20 25 30

Ser Gly Arg Arg Thr Arg Leu Cys Cys His Arg Val Pro Ser Pro Asn  
 35 40 45

Ser Thr Asn Leu Lys Gly His His Val Arg Leu Cys Lys Pro Cys Lys  
 50 55 60

Leu Glu Pro Glu Pro Arg Leu Trp Val Val Pro Gly Ala Leu Pro Gln  
 65 70 75 80

Val

&lt;210&gt; 2161

&lt;211&gt; 73

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2161

Met Asn Ile Thr Arg Lys Leu Trp Ser Arg Thr Phe Asn Cys Ser Val  
 1 5 10 15

Pro Cys Ser Asp Thr Val Pro Val Ile Ala Val Ser Val Phe Ile Leu  
 20 25 30

Phe Leu Pro Val Val Phe Tyr Leu Ser Ser Phe Leu His Ser Glu Gln

35                      40                      45  
 Lys Lys Arg Lys Leu Ile Leu Pro Lys Arg Leu Lys Ser Ser Thr Ser  
     50                      55                      60

Phe Ala Asn Ile Gln Glu Asn Ser Asn  
     65                      70

<210> 2162  
 <211> 193  
 <212> PRT  
 <213> Homo sapiens

<400> 2162  
 Met Glu Pro Gly Pro Thr Ala Ala Gln Arg Arg Cys Ser Leu Pro Pro  
     1                      5                      10                      15

Trp Leu Pro Leu Gly Leu Leu Leu Trp Ser Gly Leu Ala Leu Gly Ala  
                     20                      25                      30

Leu Pro Phe Gly Ser Ser Pro His Arg Val Phe His Asp Leu Leu Ser  
                     35                      40                      45

Glu Gln Gln Leu Leu Glu Val Glu Asp Leu Ser Leu Ser Leu Leu Gln  
     50                      55                      60

Gly Gly Gly Leu Gly Pro Leu Ser Leu Pro Pro Asp Leu Pro Asp Leu  
     65                      70                      75                      80

Asp Pro Glu Cys Arg Glu Leu Leu Leu Asp Phe Ala Asn Ser Ser Ala  
                     85                      90                      95

Glu Leu Thr Gly Cys Leu Val Arg Ser Ala Arg Pro Val Arg Leu Cys  
                     100                      105                      110

Gln Thr Cys Tyr Pro Leu Phe Gln Gln Val Val Ser Lys Met Asp Asn  
                     115                      120                      125

Ile Ser Arg Ala Ala Gly Asn Thr Ser Glu Ser Gln Ser Cys Ala Arg  
     130                      135                      140

Ser Leu Leu Met Ala Asp Arg Met Gln Ile Val Val Ile Leu Ser Glu  
     145                      150                      155                      160

Phe Phe Asn Thr Thr Trp Gln Glu Ala Asn Cys Ala Asn Cys Leu Thr  
                     165                      170                      175

Asn Asn Ser Glu Glu Leu Ser Asn Ser Thr Val Tyr Phe Leu Lys Ser  
                     180                      185                      190

Ile

<210> 2163  
 <211> 134  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2163

```

Met Ala Pro Glu Val Met Glu Gln Val Arg Gly Tyr Asp Phe Lys Ala
 1           5           10           15

Asp Ile Trp Ser Phe Gly Ile Thr Ala Ile Glu Leu Ala Thr Gly Ala
          20           25           30

Ala Pro Tyr His Lys Tyr Pro Pro Met Lys Val Leu Met Leu Thr Leu
          35           40           45

Gln Asn Asp Pro Pro Ser Leu Glu Thr Gly Val Gln Asp Lys Glu Met
 50           55           60

Leu Lys Lys Tyr Gly Lys Ser Phe Arg Lys Met Ile Ser Leu Cys Leu
 65           70           75

Gln Lys Asp Pro Glu Lys Arg Pro Thr Ala Ala Glu Leu Leu Arg His
          85           90           95

Lys Phe Phe Gln Lys Ala Lys Asn Lys Glu Phe Leu Gln Glu Lys Thr
          100          105          110

Leu Gln Arg Ala Pro Thr Ile Ser Glu Arg Ala Lys Lys Val Arg Arg
          115          120          125

Val Pro Gly Ser Cys Pro
          130

```

&lt;210&gt; 2164

&lt;211&gt; 334

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (105)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2164

```

Met Glu Pro Gly Pro Thr Ala Ala Gln Arg Arg Cys Ser Leu Pro Pro
 1           5           10           15

Trp Leu Pro Leu Gly Leu Leu Leu Trp Ser Gly Leu Ala Leu Gly Ala
          20           25           30

Leu Pro Phe Gly Ser Ser Pro His Arg Val Phe His Asp Leu Leu Ser
          35           40           45

Glu Gln Gln Leu Leu Glu Val Glu Asp Leu Ser Leu Ser Leu Leu Gln
          50           55           60

Gly Gly Gly Leu Gly Pro Leu Ser Leu Pro Pro Asp Leu Pro Asp Leu
          65           70           75           80

Asp Pro Glu Cys Arg Glu Leu Leu Leu Asp Phe Ala Asn Ser Ser Ala
          85           90           95

```

Glu Leu Thr Gly Cys Leu Val Arg Xaa Ala Arg Pro Val Arg Leu Cys  
 100 105 110  
 Gln Thr Cys Tyr Pro Leu Phe Gln Gln Val Val Ser Lys Met Asp Asn  
 115 120 125  
 Ile Ser Arg Ala Ala Gly Asn Thr Ser Glu Ser Gln Ser Cys Ala Arg  
 130 135 140  
 Ser Leu Leu Met Ala Asp Arg Met Gln Ile Val Val Ile Leu Ser Glu  
 145 150 155 160  
 Phe Phe Asn Thr Thr Trp Gln Glu Ala Asn Cys Ala Asn Cys Leu Thr  
 165 170 175  
 Asn Asn Ser Glu Glu Leu Ser Asn Ser Thr Val Tyr Phe Leu Asn Leu  
 180 185 190  
 Phe Asn His Thr Leu Thr Cys Phe Glu His Asn Leu Gln Gly Asn Ala  
 195 200 205  
 His Ser Leu Leu Gln Thr Lys Asn Tyr Ser Glu Val Cys Lys Asn Cys  
 210 215 220  
 Arg Glu Ala Tyr Lys Thr Leu Ser Ser Leu Tyr Ser Glu Met Gln Lys  
 225 230 235 240  
 Met Asn Glu Leu Glu Asn Lys Ala Glu Pro Gly Thr His Leu Cys Ile  
 245 250 255  
 Asp Val Glu Asp Ala Met Asn Ile Thr Arg Lys Leu Trp Ser Arg Thr  
 260 265 270  
 Phe Asn Cys Ser Val Pro Cys Ser Asp Thr Val Pro Val Ile Ala Val  
 275 280 285  
 Ser Val Phe Ile Leu Phe Leu Pro Val Val Phe Tyr Leu Ser Ser Phe  
 290 295 300  
 Leu His Ser Glu Gln Lys Lys Arg Lys Leu Ile Leu Pro Lys Arg Leu  
 305 310 315 320  
 Lys Ser Ser Thr Ser Phe Ala Asn Ile Gln Glu Asn Ser Asn  
 325 330

&lt;210&gt; 2165

&lt;211&gt; 49

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2165

Met Val Leu Val Phe Ala Tyr Leu Cys Val Leu Leu Ile Val Cys Trp  
 1 5 10 15  
 Val Thr Ser Lys Thr Ser Leu Ala Leu Lys Tyr Thr Val Tyr Lys Asn  
 20 25 30

Phe Lys Arg Leu Ile Trp Asn Lys Ser Ile Leu Ile Ile Thr Leu Thr  
                   35                                  40                                  45

Pro

<210> 2166  
 <211> 75  
 <212> PRT  
 <213> Homo sapiens

<400> 2166  
 Met Ser Leu Ser Ile Leu Val Ala Leu Ser Leu Gln Ile Leu Phe Leu  
   1                                  5                                  10                                  15  
 Phe Thr Ile Leu Lys Cys Met Leu Ala Lys Trp Val Asp Phe Gln Ile  
                   20                                  25                                  30  
 Lys Cys Ser Phe His Lys Ser Phe Val Met Val Phe Trp Ser Glu Met  
                   35                                  40                                  45  
 His Phe His Phe Ser Phe Leu Phe Leu Leu Ser Ile Leu Ser Phe Phe  
   50                                  55                                  60  
 Pro Asn Lys Ile Tyr Pro Gly Asp Tyr Ile Cys  
   65                                  70                                  75

<210> 2167  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<400> 2167  
 Met Leu Trp Ala Leu Asp Ser Leu Leu Phe Phe Ser His Ala Gln Leu  
   1                                  5                                  10                                  15  
 Val Pro Leu Gly Gly Gly Glu Glu Trp Gly Ser Pro Gly Leu Gly Leu  
                   20                                  25                                  30  
 His Ser Ile Ile Pro Ser Gln Ala Ser Gln Gly Val Ser Ala Pro Ala  
                   35                                  40                                  45  
 Gln Asp Leu Ala Gly Arg Ala Pro Tyr Arg Glu Ser Leu Gly Arg Leu  
   50                                  55                                  60  
 Ser Arg Leu Met Ala Gly Pro Ala Arg Gly Val Leu Arg Pro Ala Leu  
   65                                  70                                  75                                  80  
 Arg Thr Cys Pro Leu Phe  
                                   85

<210> 2168  
 <211> 152  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2168

```

Met Arg Arg Leu Leu Leu Val Thr Ser Leu Val Val Val Leu Leu Trp
 1           5           10           15

Glu Ala Gly Ala Val Pro Ala Pro Lys Val Pro Ile Lys Met Gln Val
          20           25           30

Lys His Trp Pro Ser Glu Gln Asp Pro Glu Asn Arg Ala Trp Gly Ala
      35           40           45

Arg Val Val Glu Pro Pro Glu Lys Asp Asp Gln Leu Val Val Leu Phe
      50           55           60

Pro Val Gln Lys Pro Lys Leu Leu Thr Thr Glu Glu Lys Pro Arg Gly
      65           70           75           80

Gln Gly Arg Gly Pro Ile Leu Pro Gly Thr Lys Ala Trp Met Glu Thr
          85           90           95

Glu Asp Thr Leu Gly Arg Val Leu Ser Pro Glu Pro Asp His Asp Ser
      100           105           110

Leu Tyr His Pro Pro Pro Glu Glu Asp Gln Gly Glu Glu Arg Pro Arg
      115           120           125

Leu Trp Val Met Pro Asn His Gln Val Leu Leu Gly Pro Glu Glu Asp
      130           135           140

Gln Asp His Ile Tyr His Pro Gln
145           150

```

&lt;210&gt; 2169

&lt;211&gt; 142

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2169

```

Met Arg Arg Leu Leu Leu Val Thr Ser Leu Val Val Val Leu Leu Trp
 1           5           10           15

Glu Ala Gly Ala Val Pro Ala Pro Lys Val Pro Ile Lys Met Gln Val
          20           25           30

Lys His Trp Pro Ser Glu Gln Asp Pro Glu Lys Ala Trp Gly Ala Arg
      35           40           45

Val Val Glu Pro Pro Glu Lys Asp Asp Gln Leu Val Val Leu Phe Pro
      50           55           60

Val Gln Lys Pro Lys Leu Leu Thr Thr Glu Glu Lys Pro Arg Gly Thr
      65           70           75           80

Lys Ala Trp Met Glu Thr Glu Asp Thr Leu Gly Arg Val Leu Ser Pro
          85           90           95

Glu Pro Asp His Asp Ser Leu Tyr His Pro Pro Pro Glu Glu Asp Gln

```

				100				105					110				
Gly	Glu	Glu	Arg	Pro	Arg	Leu	Trp	Val	Met	Pro	Asn	His	Gln	Val	Leu		
		115					120					125					
Leu	Gly	Pro	Glu	Glu	Asp	Gln	Asp	His	Ile	Tyr	His	Pro	Gln				
	130					135					140						

```
<210> 2170
<211> 453
<212> PRT
<213> Homo sapiens
```

<400> 2170																
Met	Lys	Leu	Leu	Val	Ile	Leu	Ile	Phe	Ser	Gly	Leu	Ile	Thr	Cys	Cys	
1				5					10					15		
Gly	Gly	Asn	Ser	Ser	His	Ser	Leu	Pro	Ser	Lys	Leu	Leu	Leu	Val	Ser	
			20					25					30			
Phe	Asp	Gly	Phe	Arg	Ala	Asp	Tyr	Leu	Gln	Asn	Tyr	Glu	Phe	Pro	His	
		35					40					45				
Leu	Gln	Asn	Phe	Ile	Lys	Glu	Gly	Val	Leu	Val	Glu	His	Val	Lys	Asn	
	50					55					60					
Val	Phe	Ile	Thr	Lys	Thr	Phe	Pro	Asn	His	Tyr	Ser	Ile	Val	Thr	Gly	
65					70					75					80	
Leu	Tyr	Glu	Glu	Ser	His	Gly	Ile	Val	Ala	Asn	Ser	Met	Tyr	Asp	Val	
				85					90					95		
Ile	Thr	Lys	Lys	His	Phe	Ser	Asp	Phe	Asp	Asp	Lys	Asp	Pro	Phe	Trp	
			100					105					110			
Trp	Asn	Glu	Ala	Val	Pro	Ile	Trp	Val	Thr	Asn	Gln	Leu	Gln	Glu	Asn	
		115					120					125				
Arg	Ser	Ser	Ala	Ala	Ala	Met	Trp	Pro	Gly	Thr	Asp	Val	Pro	Ile	His	
	130					135					140					
Asn	Thr	Thr	Pro	Ser	Tyr	Phe	Met	Asn	Tyr	Ser	Ser	Ser	Val	Ser	Phe	
145					150					155					160	
Glu	Glu	Arg	Leu	Asn	Asn	Ile	Thr	Met	Trp	Leu	Met	Asn	Ser	Asn	Pro	
				165					170					175		
Pro	Val	Thr	Phe	Ala	Thr	Leu	Tyr	Trp	Glu	Glu	Pro	Asp	Ala	Ser	Gly	
			180					185					190			
His	Lys	Tyr	Gly	Pro	Glu	Asp	Lys	Glu	Asn	Met	Tyr	Arg	Val	Leu	Lys	
		195					200					205				
Glu	Val	Asp	Asp	Leu	Ile	Gly	Glu	Leu	Val	His	Lys	Leu	Lys	Val	Leu	
	210					215					220					
Gly	Leu	Trp	Glu	Asn	Leu	Asn	Val	Ile	Ile	Thr	Ser	Asp	His	Gly	Met	
225					230					235					240	



Thr Gln Cys Ser Lys Asp Lys Leu Ile Asn Leu Asp Leu Cys Ile Asp  
 245 250 255  
 Arg Ser Ser Tyr Thr Leu Val Asp Leu Thr Pro Val Ala Ala Val Leu  
 260 265 270  
 Pro Lys Ile Asn Thr Thr Glu Val Tyr Asn Lys Leu Lys Val Cys Asn  
 275 280 285  
 Pro His Met Asn Val Tyr Leu Lys Glu Asp Ile Pro Ala Arg Phe His  
 290 295 300  
 Tyr Gln His Asn Asp Arg Ile Gln Pro Ile Ile Leu Val Ala Asp Glu  
 305 310 315 320  
 Gly Trp Thr Ile Val Leu Asn Lys Ser Leu Pro Lys Leu Gly Asp His  
 325 330 335  
 Gly Tyr Asp Asn Ser Leu Ser Ser Met His Pro Phe Leu Ala Ala His  
 340 345 350  
 Gly Pro Ala Phe His Lys Gly Tyr Lys His Ser Thr Ile Asn Ser Val  
 355 360 365  
 Asp Ile Tyr Pro Met Met Cys His Ile Leu Gly Leu Lys Pro His Pro  
 370 375 380  
 Asn Asn Gly Thr Phe Gly His Thr Lys Cys Leu Leu Val Asp Gln Trp  
 385 390 395 400  
 Cys Ile Asn Leu Pro Glu Ala Ile Gly Ile Val Ile Gly Ala Leu Leu  
 405 410 415  
 Val Leu Thr Thr Leu Thr Cys Leu Ile Ile Ile Met Gln Asn Arg Leu  
 420 425 430  
 Ser Val Pro Arg Pro Phe Ser Arg Leu Gln Leu Gln Glu Asp Asp Asp  
 435 440 445  
 Asp Pro Leu Ile Glu  
 450

&lt;210&gt; 2171

&lt;211&gt; 287

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2171

Met Gly Ala Leu Arg Pro Thr Leu Leu Pro Pro Ser Leu Pro Leu Leu  
 1 5 10 15  
 Leu Leu Leu Met Leu Gly Met Gly Cys Trp Ala Arg Glu Val Leu Val  
 20 25 30  
 Pro Glu Gly Pro Leu Tyr Arg Val Ala Gly Thr Ala Val Ser Ile Ser  
 35 40 45

Cys Asn Val Thr Gly Tyr Glu Gly Pro Ala Gln Gln Asn Phe Glu Trp  
 50 55 60  
 Phe Leu Tyr Arg Pro Glu Ala Pro Asp Thr Ala Leu Gly Ile Val Ser  
 65 70 75 80  
 Thr Lys Asp Thr Gln Phe Ser Tyr Ala Val Phe Lys Ser Arg Val Val  
 85 90 95  
 Ala Gly Glu Val Gln Val Gln Arg Leu Gln Gly Asp Ala Val Val Leu  
 100 105 110  
 Lys Ile Ala Arg Leu Gln Ala Gln Asp Ala Gly Ile Tyr Glu Cys His  
 115 120 125  
 Thr Pro Ser Thr Asp Thr Arg Tyr Leu Gly Ser Tyr Ser Gly Lys Val  
 130 135 140  
 Glu Leu Arg Val Leu Pro Asp Val Leu Gln Val Ser Ala Ala Pro Pro  
 145 150 155 160  
 Gly Pro Arg Gly Arg Gln Ala Pro Thr Ser Pro Pro Arg Met Thr Val  
 165 170 175  
 His Glu Gly Gln Glu Leu Ala Leu Gly Cys Leu Ala Arg Thr Ser Thr  
 180 185 190  
 Gln Lys His Thr His Leu Ala Val Ser Phe Gly Arg Ser Val Pro Glu  
 195 200 205  
 Ala Pro Val Gly Arg Ser Thr Leu Gln Glu Val Val Gly Ile Arg Ser  
 210 215 220  
 Asp Leu Ala Val Glu Ala Gly Ala Pro Tyr Ala Glu Arg Leu Ala Ala  
 225 230 235 240  
 Gly Glu Leu Arg Leu Gly Lys Glu Gly Thr Asp Arg Tyr Arg Met Val  
 245 250 255  
 Val Gly Gly Ala Gln Ala Gly Asp Ala Gly Thr Tyr His Cys Thr Ala  
 260 265 270  
 Ala Glu Trp Ile Gln Asp Pro Asp Gly Ser Trp Ala Gln Ile Ala  
 275 280 285

&lt;210&gt; 2172

&lt;211&gt; 613

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2172

Met Gly Ala Leu Arg Pro Thr Leu Leu Pro Pro Ser Leu Pro Leu Leu  
 1 5 10 15  
 Leu Leu Leu Met Leu Gly Met Gly Cys Trp Ala Arg Glu Val Leu Val  
 20 25 30  
 Pro Glu Gly Pro Leu Tyr Arg Val Ala Gly Thr Ala Val Ser Ile Ser

35					40					45					
Cys	Asn	Val	Thr	Gly	Tyr	Glu	Gly	Pro	Ala	Gln	Gln	Asn	Phe	Glu	Trp
	50					55					60				
Phe	Leu	Tyr	Arg	Pro	Glu	Ala	Pro	Asp	Thr	Ala	Leu	Gly	Ile	Val	Ser
	65					70					75				80
Thr	Lys	Asp	Thr	Gln	Phe	Ser	Tyr	Ala	Val	Phe	Lys	Ser	Arg	Val	Val
				85					90					95	
Ala	Gly	Glu	Val	Gln	Val	Gln	Arg	Leu	Gln	Gly	Asp	Ala	Val	Val	Leu
			100					105					110		
Lys	Ile	Ala	Arg	Leu	Gln	Ala	Gln	Asp	Ala	Gly	Ile	Tyr	Glu	Cys	His
		115					120					125			
Thr	Pro	Ser	Thr	Asp	Thr	Arg	Tyr	Leu	Gly	Ser	Tyr	Ser	Gly	Lys	Val
	130					135					140				
Glu	Leu	Arg	Val	Leu	Pro	Asp	Val	Leu	Gln	Val	Ser	Ala	Ala	Pro	Pro
	145					150					155				160
Gly	Pro	Arg	Gly	Arg	Gln	Ala	Pro	Thr	Ser	Pro	Pro	Arg	Met	Thr	Val
				165					170					175	
His	Glu	Gly	Gln	Glu	Leu	Ala	Leu	Gly	Cys	Leu	Ala	Arg	Thr	Ser	Thr
			180					185					190		
Gln	Lys	His	Thr	His	Leu	Ala	Val	Ser	Phe	Gly	Arg	Ser	Val	Pro	Glu
		195					200					205			
Ala	Pro	Val	Gly	Arg	Ser	Thr	Leu	Gln	Glu	Val	Val	Gly	Ile	Arg	Ser
	210					215					220				
Asp	Leu	Ala	Val	Glu	Ala	Gly	Ala	Pro	Tyr	Ala	Glu	Arg	Leu	Ala	Ala
	225					230					235				240
Gly	Glu	Leu	Arg	Leu	Gly	Lys	Glu	Gly	Thr	Asp	Arg	Tyr	Arg	Met	Val
				245					250					255	
Val	Gly	Gly	Ala	Gln	Ala	Gly	Asp	Ala	Gly	Thr	Tyr	His	Cys	Thr	Ala
			260					265					270		
Ala	Glu	Trp	Ile	Gln	Asp	Pro	Asp	Gly	Ser	Trp	Ala	Gln	Ile	Ala	Glu
	275						280					285			
Lys	Arg	Ala	Val	Leu	Ala	His	Val	Asp	Val	Gln	Thr	Leu	Ser	Ser	Gln
	290					295					300				
Leu	Ala	Val	Thr	Val	Gly	Pro	Gly	Glu	Arg	Arg	Ile	Gly	Pro	Gly	Glu
	305					310					315				320
Pro	Leu	Glu	Leu	Leu	Cys	Asn	Val	Ser	Gly	Ala	Leu	Pro	Pro	Ala	Gly
				325					330					335	
Arg	His	Ala	Ala	Tyr	Ser	Val	Gly	Trp	Glu	Met	Ala	Pro	Ala	Gly	Ala
			340					345					350		
Pro	Gly	Pro	Gly	Arg	Leu	Val	Ala	Gln	Leu	Asp	Thr	Glu	Gly	Val	Gly

355	360	365
Ser Leu Gly Pro Gly Tyr Glu Gly Arg His Ile Ala Met Glu Lys Val		
370	375	380
Ala Ser Arg Thr Tyr Arg Leu Arg Leu Glu Ala Ala Arg Pro Gly Asp		
385	390	395
Ala Gly Thr Tyr Arg Cys Leu Ala Lys Ala Tyr Val Arg Gly Ser Gly		
	405	410
Thr Arg Leu Arg Glu Ala Ala Ser Ala Arg Ser Arg Pro Leu Pro Val		
	420	425
His Val Arg Glu Glu Gly Val Val Leu Glu Ala Val Ala Trp Leu Ala		
	435	440
Gly Gly Thr Val Tyr Arg Gly Glu Thr Ala Ser Leu Leu Cys Asn Ile		
	450	455
Ser Val Arg Gly Gly Pro Pro Gly Leu Arg Leu Ala Ala Ser Trp Trp		
465	470	475
Val Glu Arg Pro Glu Asp Gly Glu Leu Ser Ser Val Pro Ala Gln Leu		
	485	490
Val Gly Gly Val Gly Gln Asp Gly Val Ala Glu Leu Gly Val Arg Pro		
	500	505
Gly Gly Gly Pro Val Ser Val Glu Leu Val Gly Pro Arg Ser His Arg		
	515	520
Leu Arg Leu His Ser Leu Gly Pro Glu Asp Glu Gly Val Tyr His Cys		
	530	535
Ala Pro Ser Ala Trp Val Gln His Ala Asp Tyr Ser Trp Tyr Gln Ala		
545	550	555
Gly Ser Ala Arg Ser Gly Pro Val Thr Val Tyr Pro Tyr Met His Ala		
	565	570
Leu Asp Thr Leu Phe Val Pro Leu Leu Val Gly Thr Gly Val Ala Leu		
	580	585
Val Thr Gly Ala Thr Val Leu Gly Thr Ile Thr Cys Cys Phe Met Lys		
	595	600
Arg Leu Arg Lys Arg		
610		

&lt;210&gt; 2173

&lt;211&gt; 122

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2173

Met Trp Gly Trp Gly Ser Leu Val Ser Ala Arg Gly Gly Trp Gly Val
1 5 10 15

Phe	Ile	Tyr	Leu	Tyr	Met	Gly	Leu	Tyr	Ile	Val	Leu	Trp	Gly	Met	Gly
			20						25					30	
Glu	Pro	Ala	Gly	Gly	Glu	Asn	Pro	Pro	Leu	Ser	Pro	His	Pro	Pro	Gly
		35					40					45			
Arg	Ala	Asn	Val	Lys	Leu	Leu	Ile	Phe	Val	Leu	Tyr	Ile	Phe	Tyr	Ile
	50					55					60				
Asn	Ile	Ser	Ile	Phe	Phe	Leu	Gln	Asn	Gln	Phe	Ile	Asn	Gly	Arg	Gly
65					70					75					80
Val	Trp	Gly	Gly	His	Met	Glu	Leu	Pro	Leu	Trp	Gly	Gly	Pro	Leu	His
				85					90					95	
Tyr	Pro	Thr	Tyr	Arg	Pro	Phe	Pro	His	Pro	Pro	Pro	His	Ser	Pro	Pro
			100					105					110		
Pro	Gly	Cys	Asp	Cys	Cys	Lys	Met	Gly	Val						
		115					120								

<210> 2174

<211> 613

<212> PRT

<213> Homo sapiens

 $\langle 220 \rangle$ 

&lt;221&gt; SITE

<222> (507)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2174

Met Gly Ala Leu Arg Pro Thr Leu Leu Pro Pro Ser Leu Pro Leu Leu  
1 5 10 15

Leu Leu Leu Met Leu Gly Met Gly Cys Trp Ala Arg Glu Val Leu Val  
20 25 30

Pro Glu Gly    Pro Leu Tyr Arg Val Ala Gly Thr Ala Val Ser Ile Ser  
                35                    40                                45

Cys Asn Val Thr Gly Tyr Glu Gly Pro Ala Gln Gln Asn Phe Glu Trp  
50 55 60

Phe Leu Tyr Arg Pro Glu Ala Pro Asp Thr Ala Leu Gly Ile Val Ser  
65 70 75 80

Thr Lys Asp Thr Gln Phe Ser Tyr Ala Val Phe Lys Ser Arg Val Val  
85 90 95

Ala Gly Glu Val Gln Val Gln Arg Leu Gln Gly Asp Ala Val Val Leu  
100 105 110

Lys Ile Ala Arg Leu Gln Ala Gln Asp Ala Gly Ile Tyr Glu Cys His  
 115 120 125

Thr Pro Ser Thr Asp Thr Arg Tyr Leu Gly Ser Tyr Ser Gly Lys Val

130				135				140							
Glu 145	Leu	Arg	Val	Leu	Pro 150	Asp	Val	Leu	Gln	Val 155	Ser	Ala	Ala	Pro	Pro 160
Gly	Pro	Arg	Gly	Arg 165	Gln	Ala	Pro	Thr	Ser 170	Pro	Pro	Arg	Met	Thr 175	Val
His	Glu	Gly	Gln 180	Glu	Leu	Ala	Leu	Gly 185	Cys	Leu	Ala	Arg	Thr 190	Ser	Thr
Gln	Lys	His 195	Thr	His	Leu	Ala	Val 200	Ser	Phe	Gly	Arg	Ser 205	Val	Pro	Glu
Ala	Pro 210	Val	Gly	Arg	Ser	Thr 215	Leu	Gln	Glu	Val	Val 220	Gly	Ile	Arg	Ser
Asp 225	Leu	Ala	Val	Glu	Ala 230	Gly	Ala	Pro	Tyr	Ala 235	Glu	Arg	Leu	Ala	Ala 240
Gly	Glu	Leu	Arg	Leu 245	Gly	Lys	Glu	Gly	Thr 250	Asp	Arg	Tyr	Arg	Met 255	Val
Val	Gly	Gly	Ala 260	Gln	Ala	Gly	Asp	Ala 265	Gly	Thr	Tyr	His	Cys 270	Thr	Ala
Ala	Glu	Trp 275	Ile	Gln	Asp	Pro	Asp 280	Gly	Ser	Trp	Ala	Gln 285	Ile	Ala	Glu
Lys	Arg 290	Ala	Val	Leu	Ala	His 295	Val	Asp	Val	Gln	Thr 300	Leu	Ser	Ser	Gln
Leu 305	Ala	Val	Thr	Val	Gly 310	Pro	Gly	Glu	Arg	Arg 315	Ile	Gly	Pro	Gly	Glu 320
Pro	Leu	Glu	Leu	Leu 325	Cys	Asn	Val	Ser	Gly 330	Ala	Leu	Pro	Pro	Ala 335	Gly
Arg	His	Ala	Ala 340	Tyr	Ser	Val	Gly	Trp 345	Glu	Met	Ala	Pro	Ala 350	Gly	Ala
Pro	Gly	Pro 355	Gly	Arg	Leu	Val	Ala 360	Gln	Leu	Asp	Thr	Glu 365	Gly	Val	Gly
Ser	Leu 370	Gly	Pro	Gly	Tyr	Glu 375	Gly	Arg	His	Ile	Ala 380	Met	Glu	Lys	Val
Ala 385	Ser	Arg	Thr	Tyr	Arg 390	Leu	Arg	Leu	Glu	Ala 395	Ala	Arg	Pro	Gly	Asp 400
Ala	Gly	Thr	Tyr	Arg 405	Cys	Leu	Ala	Lys	Ala 410	Tyr	Val	Arg	Gly	Ser 415	Gly
Thr	Arg	Leu	Arg 420	Glu	Ala	Ala	Ser	Ala 425	Arg	Ser	Arg	Pro	Leu	Pro	Val
His	Val	Arg 435	Glu	Glu	Gly	Val	Val 440	Leu	Glu	Ala	Val	Ala 445	Trp	Leu	Ala
Gly	Gly	Thr	Val	Tyr	Arg	Gly	Glu	Thr	Ala	Ser	Leu	Leu	Cys	Asn	Ile

450                      455                      460  
 Ser Val Arg Gly Gly Pro Pro Gly Leu Arg Leu Ala Ala Ser Trp Trp  
 465                      470                      475                      480  
 Val Glu Arg Pro Glu Asp Gly Glu Leu Ser Ser Val Pro Ala Gln Leu  
                     485                      490                      495  
 Val Gly Gly Val Gly Gln Asp Gly Val Ala Xaa Leu Gly Val Arg Pro  
                     500                      505                      510  
 Gly Gly Gly Pro Val Ser Val Glu Leu Val Gly Pro Arg Ser His Arg  
                     515                      520                      525  
 Leu Arg Leu His Ser Leu Gly Pro Glu Asp Glu Gly Val Tyr His Cys  
                     530                      535                      540  
 Ala Pro Ser Ala Trp Val Gln His Ala Asp Tyr Ser Trp Tyr Gln Ala  
 545                      550                      555                      560  
 Gly Ser Ala Arg Ser Gly Pro Val Thr Val Tyr Pro Tyr Met His Ala  
                     565                      570                      575  
 Leu Asp Thr Leu Phe Val Pro Leu Leu Val Gly Thr Gly Val Ala Leu  
                     580                      585                      590  
 Val Thr Gly Ala Thr Val Leu Gly Thr Ile Thr Cys Cys Phe Met Lys  
                     595                      600                      605  
 Arg Leu Arg Lys Arg  
 610

<210> 2175  
 <211> 60  
 <212> PRT  
 <213> Homo sapiens

<400> 2175  
 Met Ala Trp Ala Val Thr Leu Ile Leu Ser Leu Ser Arg Ala Val Arg  
   1                      5                      10                      15  
 Thr Gln Glu Val Pro Met Ala Leu Gln Ala His Ser Gly Ile Gln Leu  
                     20                      25                      30  
 Ala Ser Arg Val Gly Leu Pro Gly Pro Trp Pro Glu Cys Ser Thr Leu  
                     35                      40                      45  
 Ser Ser Arg Cys His Leu Ser Met Asp Ser Lys Val  
                     50                      55                      60

<210> 2176  
 <211> 396  
 <212> PRT  
 <213> Homo sapiens

<400> 2176

Met Trp Trp Leu Leu Leu Trp Gly Val Leu Gln Ala Cys Pro Thr Arg  
 1 5 10 15  
 Gly Ser Val Leu Leu Ala Gln Glu Leu Pro Gln Gln Leu Thr Ser Pro  
 20 25 30  
 Gly Tyr Pro Glu Pro Tyr Gly Lys Gly Gln Glu Ser Ser Thr Asp Ile  
 35 40 45  
 Lys Ala Pro Glu Gly Phe Ala Val Arg Leu Val Phe Gln Asp Phe Asp  
 50 55 60  
 Leu Glu Pro Ser Gln Asp Cys Ala Gly Asp Ser Val Thr Ile Ser Phe  
 65 70 75 80  
 Val Gly Ser Asp Pro Ser Gln Phe Cys Gly Gln Gln Gly Ser Pro Leu  
 85 90 95  
 Gly Arg Pro Pro Gly Gln Arg Glu Phe Val Ser Ser Gly Arg Ser Leu  
 100 105 110  
 Arg Leu Thr Phe Arg Thr Gln Pro Ser Ser Glu Asn Lys Thr Ala His  
 115 120 125  
 Leu His Lys Gly Phe Leu Ala Leu Tyr Gln Thr Val Ala Val Asn Tyr  
 130 135 140  
 Ser Gln Pro Ile Ser Glu Ala Ser Arg Gly Ser Glu Ala Ile Asn Ala  
 145 150 155 160  
 Pro Gly Asp Asn Pro Ala Lys Val Gln Asn His Cys Gln Glu Pro Tyr  
 165 170 175  
 Tyr Gln Ala Ala Ala Ala Gly Ala Leu Thr Cys Ala Thr Pro Gly Thr  
 180 185 190  
 Trp Lys Asp Arg Gln Asp Gly Glu Glu Val Leu Gln Cys Met Pro Val  
 195 200 205  
 Cys Gly Arg Pro Val Thr Pro Ile Ala Gln Asn Gln Thr Thr Leu Gly  
 210 215 220  
 Ser Ser Arg Ala Lys Leu Gly Asn Phe Pro Trp Gln Ala Phe Thr Ser  
 225 230 235 240  
 Ile His Gly Arg Gly Gly Gly Ala Leu Leu Gly Asp Arg Trp Ile Leu  
 245 250 255  
 Thr Ala Ala His Thr Ile Tyr Pro Lys Asp Ser Val Ser Leu Arg Lys  
 260 265 270  
 Asn Gln Ser Val Asn Val Phe Leu Gly His Thr Ala Ile Asp Glu Met  
 275 280 285  
 Leu Lys Leu Gly Asn His Pro Val His Arg Val Val Val His Pro Asp  
 290 295 300  
 Tyr Arg Gln Asn Glu Ser His Asn Phe Ser Gly Asp Ile Ala Leu Leu  
 305 310 315 320



Glu Leu Gln His Ser Ile Pro Leu Gly Pro Asn Val Leu Pro Val Cys  
                                   325                                  330                                  335  
 Leu Pro Asp Asn Glu Thr Leu Tyr Arg Ser Gly Leu Leu Gly Tyr Val  
                                   340                                  345                                  350  
 Ser Gly Phe Gly Met Glu Met Gly Trp Leu Thr Thr Glu Leu Lys Tyr  
                                   355                                  360                                  365  
 Ser Arg Leu Pro Val Ala Pro Arg Glu Ala Cys Asn Ala Trp Leu Gln  
                                   370                                  375                                  380  
 Lys Arg Gln Arg Pro Glu Lys Lys Lys Lys Lys Lys  
 385                                  390                                  395

&lt;210&gt; 2177

&lt;211&gt; 172

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2177

Gly Thr Arg Thr Glu Arg Asp Glu Leu Leu Lys Asp Leu Gln Gln Ser  
   1                                  5                                  10                                  15  
 Ile Ala Arg Glu Pro Ser Ala Pro Ser Ile Pro Thr Pro Ala Tyr Gln  
                                   20                                  25                                  30  
 Ser Leu Pro Ala Gly Gly His Ala Pro Thr Pro Pro Thr Pro Ala Pro  
                                   35                                  40                                  45  
 Arg Thr Met Pro Pro Thr Lys Pro Gln Pro Pro Ala Arg Pro Pro Pro  
                                   50                                  55                                  60  
 Pro Val Leu Pro Ala Asn Arg Ala Pro Ser Ala Thr Ala Pro Ser Pro  
                                   65                                  70                                  75                                  80  
 Val Gly Ala Gly Thr Ala Ala Pro Ala Pro Ser Gln Thr Pro Gly Ser  
                                   85                                  90                                  95  
 Ala Pro Pro Pro Gln Ala Gln Gly Pro Pro Tyr Pro Thr Tyr Pro Gly  
                                   100                                  105                                  110  
 Tyr Pro Gly Tyr Cys Gln Met Pro Met Pro Met Gly Tyr Asn Pro Tyr  
                                   115                                  120                                  125  
 Ala Tyr Gly Gln Tyr Asn Met Pro Tyr Pro Pro Val Tyr His Gln Ser  
                                   130                                  135                                  140  
 Pro Gly Gln Ala Pro Tyr Pro Gly Pro Gln Gln Pro Ser Tyr Pro Phe  
                                   145                                  150                                  155                                  160  
 Pro Gln Pro Pro Gln Gln Ser Tyr Tyr Pro Gln Gln  
                                   165                                  170

&lt;210&gt; 2178

&lt;211&gt; 142

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (111)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2178

Met	His	Gln	Leu	Leu	Gln	Leu	Gln	Arg	Gln	Glu	Pro	Cys	Arg	Leu	Leu
1				5					10					15	

Ser	Pro	Ser	Pro	Gln	Pro	Gly	Leu	His	His	Leu	Cys	Phe	Gln	Gln	Ile
			20					25					30		

Glu	Leu	Leu	Leu	Leu	Leu	Leu	His	Leu	Gln	Trp	Gly	Leu	Gly	Leu	Leu
			35				40					45			

Arg	Gln	Leu	His	His	Lys	Arg	Leu	Ala	Gln	Leu	Leu	Leu	His	Arg	Arg
	50					55					60				

Arg	Asp	His	Pro	Ile	Pro	Pro	Ile	Gln	Asp	Ile	Leu	Gly	Ile	Ala	Lys
	65				70					75					80

Cys	Pro	Cys	Pro	Trp	Ala	Ile	Ile	Leu	Met	Arg	Met	Ala	Ser	Ile	Ile
				85					90					95	

Cys	His	Ile	His	Gln	Cys	Ile	Thr	Arg	Val	Leu	Asp	Arg	Leu	Xaa	Thr
			100					105					110		

Arg	Asp	Pro	Ser	Ser	Leu	His	Thr	Pro	Ser	Leu	Ser	Pro	His	Ser	Ser
		115					120					125			

Leu	Thr	Ile	His	Ser	Ser	Asn	Met	Ser	Ala	Gln	Gln	Leu	Ser
	130					135					140		

&lt;210&gt; 2179

&lt;211&gt; 868

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (194)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (309)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (550)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2179

Met Ala Thr Phe Ile Ser Val Gln Leu Lys Lys Thr Ser Glu Val Asp

1	5	10	15
Leu Ala Lys	Pro Leu Val Lys Phe Ile Gln Gln Thr Tyr	Pro Ser Gly	
	20	25	30
Gly Glu Glu Gln Ala Gln Tyr Cys Arg Ala Ala Glu Glu Leu Ser Lys			
	35	40	45
Leu Arg Arg Ala Ala Val Gly Arg Pro Leu Asp Lys His Glu Gly Ala			
	50	55	60
Leu Glu Thr Leu Leu Arg Tyr Tyr Asp Gln Ile Cys Ser Ile Glu Pro			
	65	70	75
Lys Phe Pro Phe Ser Glu Asn Gln Ile Cys Leu Thr Phe Thr Trp Lys			
	85	90	95
Asp Ala Phe Asp Lys Gly Ser Leu Phe Gly Gly Ser Val Lys Leu Ala			
	100	105	110
Leu Ala Ser Leu Gly Tyr Glu Lys Ser Cys Val Leu Phe Asn Cys Ala			
	115	120	125
Ala Leu Ala Ser Gln Ile Ala Ala Glu Gln Asn Leu Asp Asn Asp Glu			
	130	135	140
Gly Leu Lys Ile Ala Ala Lys His Tyr Gln Phe Ala Ser Gly Ala Phe			
	145	150	155
Leu His Ile Lys Glu Thr Val Leu Ser Ala Leu Ser Arg Glu Pro Thr			
	165	170	175
Val Asp Ile Ser Pro Asp Thr Val Gly Thr Leu Ser Leu Ile Met Leu			
	180	185	190
Ala Xaa Ala Gln Glu Val Phe Phe Leu Lys Ala Thr Arg Asp Lys Met			
	195	200	205
Lys Asp Ala Ile Ile Ala Lys Leu Ala Asn Gln Ala Ala Asp Tyr Phe			
	210	215	220
Gly Asp Ala Phe Lys Gln Cys Gln Tyr Lys Asp Thr Leu Pro Lys Glu			
	225	230	235
Val Phe Pro Val Leu Ala Ala Lys His Cys Ile Met Gln Ala Asn Ala			
	245	250	255
Glu Tyr His Gln Ser Ile Leu Ala Lys Gln Gln Lys Lys Phe Gly Glu			
	260	265	270
Glu Ile Ala Arg Leu Gln His Ala Ala Glu Leu Ile Lys Thr Val Ala			
	275	280	285
Ser Arg Tyr Asp Glu Tyr Val Asn Val Lys Asp Phe Ser Asp Lys Ile			
	290	295	300
Asn Arg Ala Leu Xaa Ala Ala Lys Lys Asp Asn Asp Phe Ile Tyr His			
	305	310	315
Asp Arg Val Pro Asp Leu Lys Asp Leu Asp Pro Ile Gly Lys Ala Thr			

325										330				335			
Leu	Val	Lys	Ser	Thr	Pro	Val	Asn	Val	Pro	Ile	Ser	Gln	Lys	Phe	Thr		
			340					345					350				
Asp	Leu	Phe	Glu	Lys	Met	Val	Pro	Val	Ser	Val	Gln	Gln	Ser	Leu	Ala		
		355					360					365					
Ala	Tyr	Asn	Gln	Arg	Lys	Ala	Asp	Leu	Val	Asn	Arg	Ser	Ile	Ala	Gln		
	370					375					380						
Met	Arg	Glu	Ala	Thr	Thr	Leu	Ala	Asn	Gly	Val	Leu	Ala	Ser	Leu	Asn		
385					390					395					400		
Leu	Pro	Ala	Ala	Ile	Glu	Asp	Val	Ser	Gly	Asp	Thr	Val	Pro	Gln	Ser		
				405					410					415			
Ile	Leu	Thr	Lys	Ser	Arg	Ser	Val	Ile	Glu	Gln	Gly	Gly	Ile	Gln	Thr		
			420					425					430				
Val	Asp	Gln	Leu	Ile	Lys	Glu	Leu	Pro	Glu	Leu	Leu	Gln	Arg	Asn	Arg		
		435					440					445					
Glu	Ile	Leu	Asp	Glu	Ser	Leu	Arg	Leu	Leu	Asp	Glu	Glu	Glu	Ala	Thr		
	450					455					460						
Asp	Asn	Asp	Leu	Arg	Ala	Lys	Phe	Lys	Glu	Arg	Trp	Gln	Arg	Thr	Pro		
465					470					475					480		
Ser	Asn	Glu	Leu	Tyr	Lys	Pro	Leu	Arg	Ala	Glu	Gly	Thr	Asn	Phe	Arg		
				485					490					495			
Thr	Val	Leu	Asp	Lys	Ala	Val	Gln	Ala	Asp	Gly	Gln	Val	Lys	Glu	Cys		
			500					505					510				
Tyr	Gln	Ser	His	Arg	Asp	Thr	Ile	Val	Leu	Leu	Cys	Lys	Pro	Glu	Pro		
		515					520					525					
Glu	Leu	Asn	Ala	Ala	Ile	Pro	Ser	Ala	Asn	Pro	Ala	Lys	Thr	Met	Gln		
	530					535					540						
Gly	Ser	Glu	Val	Val	Xaa	Val	Leu	Lys	Ser	Leu	Leu	Ser	Asn	Leu	Asp		
545					550					555					560		
Glu	Val	Lys	Lys	Glu	Arg	Glu	Gly	Leu	Glu	Asn	Asp	Leu	Lys	Ser	Val		
				565					570					575			
Asn	Phe	Asp	Met	Thr	Ser	Lys	Phe	Leu	Thr	Ala	Leu	Ala	Gln	Asp	Gly		
			580					585					590				
Val	Ile	Asn	Glu	Glu	Ala	Leu	Ser	Val	Thr	Glu	Leu	Asp	Arg	Val	Tyr		
		595					600					605					
Gly	Gly	Leu	Thr	Thr	Lys	Val	Gln	Glu	Ser	Leu	Lys	Lys	Gln	Glu	Gly		
	610					615					620						
Leu	Leu	Lys	Asn	Ile	Gln	Val	Ser	His	Gln	Glu	Phe	Ser	Lys	Met	Lys		
625					630					635					640		
Gln	Ser	Asn	Asn	Glu	Ala	Asn	Leu	Arg	Glu	Glu	Val	Leu	Lys	Asn	Leu		

645										650					655				
Ala	Thr	Ala	Tyr	Asp	Asn	Phe	Val	Glu	Leu	Val	Ala	Asn	Leu	Lys	Glu				
			660					665					670						
Gly	Thr	Lys	Phe	Tyr	Asn	Glu	Leu	Thr	Glu	Ile	Leu	Val	Arg	Phe	Gln				
		675					680					685							
Asn	Lys	Cys	Ser	Asp	Ile	Val	Phe	Ala	Arg	Lys	Thr	Glu	Arg	Asp	Glu				
	690					695					700								
Leu	Leu	Lys	Asp	Leu	Gln	Gln	Ser	Ile	Ala	Arg	Glu	Pro	Ser	Ala	Pro				
705					710					715					720				
Ser	Ile	Pro	Thr	Pro	Ala	Tyr	Gln	Ser	Leu	Pro	Ala	Gly	Gly	His	Ala				
			725						730					735					
Pro	Thr	Pro	Pro	Thr	Pro	Ala	Pro	Arg	Thr	Met	Pro	Pro	Thr	Lys	Pro				
			740					745					750						
Gln	Pro	Pro	Ala	Arg	Pro	Pro	Pro	Pro	Val	Leu	Pro	Ala	Asn	Arg	Ala				
		755					760					765							
Pro	Ser	Ala	Thr	Ala	Pro	Ser	Pro	Val	Gly	Ala	Gly	Thr	Ala	Ala	Pro				
	770					775					780								
Ala	Pro	Ser	Gln	Thr	Pro	Gly	Ser	Ala	Pro	Pro	Pro	Gln	Ala	Gln	Gly				
785					790					795					800				
Pro	Pro	Tyr	Pro	Thr	Tyr	Pro	Gly	Tyr	Pro	Gly	Tyr	Cys	Gln	Met	Pro				
			805					810						815					
Met	Pro	Met	Gly	Tyr	Asn	Pro	Tyr	Ala	Tyr	Gly	Gln	Tyr	Asn	Met	Pro				
			820					825					830						
Tyr	Pro	Pro	Val	Tyr	His	Gln	Ser	Pro	Gly	Gln	Ala	Pro	Tyr	Pro	Gly				
		835					840					845							
Pro	Gln	Gln	Pro	Ser	Tyr	Pro	Phe	Pro	Gln	Pro	Pro	Gln	Gln	Ser	Tyr				
	850					855						860							
Tyr	Pro	Gln	Gln																
865																			

&lt;210&gt; 2180

&lt;211&gt; 102

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2180

Met	Lys	Pro	Ala	Thr	Ala	Ser	Ala	Leu	Leu	Leu	Leu	Leu	Leu	Gly	Leu				
1				5				10						15					
Ala	Trp	Thr	Gln	Gly	Ser	His	Gly	Trp	Gly	Ala	Asp	Ala	Ser	Ser	Leu				
			20				25						30						
Gln	Lys	Arg	Ala	Gly	Arg	Ala	Asp	Gln	Pro	Gly	Ala	Gly	Trp	Gln	Glu				
	35					40						45							

Val Ala Ala Val Thr Ser Lys Asn Tyr Asn Tyr Asn Gln His Ala Tyr  
 50 55 60

Pro Thr Ala Tyr Gly Gly Lys Tyr Ser Val Lys Thr Pro Ala Lys Gly  
 65 70 75 80

Gly Val Ser Pro Ser Ser Ser Ala Ser Arg Val Gln Pro Gly Leu Leu  
 85 90 95

Gln Trp Val Lys Phe Trp  
 100

&lt;210&gt; 2181

&lt;211&gt; 140

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (36)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2181

Met Phe Leu Phe Gly Gly Phe Leu Met Thr Leu Phe Gly Leu Phe Val  
 1 5 10 15

Ser Leu Val Phe Leu Gly Gln Ala Phe Thr Ile Met Leu Val Tyr Val  
 20 25 30

Trp Ser Arg Xaa Asn Pro Tyr Val Arg Met Asn Phe Phe Gly Leu Leu  
 35 40 45

Asn Phe Gln Ala Pro Phe Leu Pro Trp Val Leu Met Gly Phe Ser Leu  
 50 55 60

Leu Leu Gly Asn Ser Ile Ile Val Asp Leu Leu Gly Ile Ala Val Gly  
 65 70 75 80

His Ile Tyr Phe Phe Leu Glu Asp Val Phe Pro Asn Gln Pro Gly Gly  
 85 90 95

Ile Arg Ile Leu Lys Thr Pro Ser Ile Leu Lys Ala Ile Phe Asp Thr  
 100 105 110

Pro Asp Glu Asp Pro Asn Tyr Asn Pro Leu Pro Glu Glu Arg Pro Gly  
 115 120 125

Gly Phe Ala Trp Gly Glu Gly Gln Arg Leu Gly Gly  
 130 135 140

&lt;210&gt; 2182

&lt;211&gt; 156

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2182

Met Leu Glu Glu Gly Ser Phe Arg Gly Arg Thr Ala Asp Phe Val Phe  
 1 5 10 15

Met Phe Leu Phe Gly Gly Phe Leu Met Thr Leu Phe Gly Leu Phe Val  
 20 25 30

Ser Leu Val Phe Leu Gly Gln Ala Phe Thr Ile Met Leu Val Tyr Val  
 35 40 45

Trp Ser Arg Arg Asn Pro Tyr Val Arg Met Asn Phe Phe Gly Leu Leu  
 50 55 60

Asn Phe Gln Ala Pro Phe Leu Pro Trp Val Leu Met Gly Phe Ser Leu  
 65 70 75 80

Leu Leu Gly Asn Ser Ile Ile Val Asp Leu Leu Gly Ile Ala Val Gly  
 85 90 95

His Ile Tyr Phe Phe Leu Glu Asp Val Phe Pro Asn Gln Pro Gly Gly  
 100 105 110

Ile Arg Ile Leu Lys Thr Pro Ser Ile Leu Lys Ala Ile Phe Asp Thr  
 115 120 125

Pro Asp Glu Asp Pro Asn Tyr Asn Pro Leu Pro Glu Glu Arg Pro Gly  
 130 135 140

Gly Phe Ala Trp Gly Glu Gly Gln Arg Leu Gly Gly  
 145 150 155

&lt;210&gt; 2183

&lt;211&gt; 239

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2183

Met Ala Tyr Gln Ser Leu Arg Leu Glu Tyr Leu Gln Ile Pro Pro Val  
 1 5 10 15

Ser Arg Ala Tyr Thr Thr Ala Cys Val Leu Thr Thr Ala Ala Val Gln  
 20 25 30

Leu Glu Leu Ile Thr Pro Phe Gln Leu Tyr Phe Asn Pro Glu Leu Ile  
 35 40 45

Phe Lys His Phe Gln Ile Trp Arg Leu Ile Thr Asn Phe Leu Phe Phe  
 50 55 60

Gly Pro Val Gly Phe Asn Phe Leu Phe Asn Met Ile Phe Leu Tyr Arg  
 65 70 75 80

Tyr Cys Arg Met Leu Glu Glu Gly Ser Phe Arg Gly Arg Thr Ala Asp  
 85 90 95

Phe Val Phe Met Phe Leu Phe Gly Gly Phe Leu Met Thr Leu Phe Gly  
 100 105 110

Leu Phe Val Ser Leu Val Phe Leu Gly Gln Ala Phe Thr Ile Met Leu  
 115 120 125  
 Val Tyr Val Trp Ser Arg Arg Asn Pro Tyr Val Arg Met Asn Phe Phe  
 130 135 140  
 Gly Leu Leu Asn Phe Gln Ala Pro Phe Leu Pro Trp Val Leu Met Gly  
 145 150 155 160  
 Phe Ser Leu Leu Leu Gly Asn Ser Ile Ile Val Asp Leu Leu Gly Ile  
 165 170 175  
 Ala Val Gly His Ile Tyr Phe Phe Leu Glu Asp Val Phe Pro Asn Gln  
 180 185 190  
 Pro Gly Gly Ile Arg Ile Leu Lys Thr Pro Ser Ile Leu Lys Ala Ile  
 195 200 205  
 Phe Asp Thr Pro Asp Glu Asp Pro Asn Tyr Asn Pro Leu Pro Glu Glu  
 210 215 220  
 Arg Pro Gly Gly Phe Ala Trp Gly Glu Gly Gln Arg Leu Gly Gly  
 225 230 235

&lt;210&gt; 2184

&lt;211&gt; 132

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2184

Met Thr Leu Phe Gly Leu Phe Val Ser Leu Val Phe Leu Gly Gln Ala  
 1 5 10 15  
 Phe Thr Ile Met Leu Val Tyr Val Trp Ser Arg Arg Asn Pro Tyr Val  
 20 25 30  
 Arg Met Asn Phe Phe Gly Leu Leu Asn Phe Gln Ala Pro Phe Leu Pro  
 35 40 45  
 Trp Val Leu Met Gly Phe Ser Leu Leu Leu Gly Asn Ser Ile Ile Val  
 50 55 60  
 Asp Leu Leu Gly Ile Ala Val Gly His Ile Tyr Phe Phe Leu Glu Asp  
 65 70 75 80  
 Val Phe Pro Asn Gln Pro Gly Gly Ile Arg Ile Leu Lys Thr Pro Ser  
 85 90 95  
 Ile Leu Lys Ala Ile Phe Asp Thr Pro Asp Glu Asp Pro Asn Tyr Asn  
 100 105 110  
 Pro Leu Pro Glu Glu Arg Pro Gly Gly Phe Ala Trp Gly Glu Gly Gln  
 115 120 125  
 Arg Leu Gly Gly  
 130



&lt;210&gt; 2185

&lt;211&gt; 339

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2185

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Met Ser Trp Ser Thr Phe Leu Leu Ala Glu Ala Cys Gly Phe Thr Gly
  1              5              10              15

Val Val Ala Val Leu Phe Cys Gly Ile Thr Gln Ala His Tyr Thr Tyr
      20              25              30

Asn Asn Leu Ser Val Glu Ser Arg Ser Arg Thr Lys Gln Leu Phe Glu
      35              40              45

Val Leu His Phe Leu Ala Glu Asn Phe Ile Phe Ser Tyr Met Gly Leu
      50              55              60

Ala Leu Phe Thr Phe Gln Lys His Val Phe Ser Pro Ile Phe Ile Ile
      65              70              75              80

Gly Ala Phe Val Ala Ile Phe Leu Gly Arg Ala Ala His Ile Tyr Pro
      85              90              95

Leu Ser Phe Phe Leu Asn Leu Gly Arg Arg His Lys Ile Gly Trp Asn
      100             105             110

Phe Gln His Met Met Met Phe Ser Gly Leu Arg Gly Ala Met Ala Phe
      115             120             125

Ala Leu Ala Ile Arg Asp Thr Ala Ser Tyr Ala Arg Gln Met Met Phe
      130             135             140

Thr Thr Thr Leu Leu Ile Val Phe Phe Thr Val Trp Ile Ile Gly Gly
      145             150             155             160

Gly Thr Thr Pro Met Leu Ser Trp Leu Asn Ile Arg Val Gly Val Asp
      165             170             175

Pro Asp Gln Asp Pro Pro Pro Asn Asn Asp Ser Phe Gln Val Leu Gln
      180             185             190

Gly Asp Gly Pro Asp Ser Ala Arg Gly Asn Arg Thr Lys Gln Glu Ser
      195             200             205

Ala Trp Ile Phe Arg Leu Trp Tyr Ser Phe Asp His Asn Tyr Leu Lys
      210             215             220

Pro Ile Leu Thr His Ser Gly Pro Pro Leu Thr Thr Thr Leu Pro Ala
      225             230             235             240

Trp Cys Gly Leu Leu Ala Arg Cys Leu Thr Ser Pro Gln Val Tyr Asp
      245             250             255

Asn Gln Glu Pro Leu Arg Glu Glu Asp Ser Asp Phe Ile Leu Thr Glu
      260             265             270

Gly Asp Leu Thr Leu Thr Tyr Gly Asp Ser Thr Val Thr Ala Asn Gly
      275             280             285

```

Ser Ser Ser Ser His Thr Ala Ser Thr Ser Leu Glu Gly Ser Arg Arg  
 290 295 300

Thr Lys Ser Ser Ser Glu Glu Val Leu Glu Arg Asp Leu Gly Met Gly  
 305 310 315 320

Asp Gln Lys Val Ser Ser Arg Gly Thr Arg Leu Val Phe Pro Leu Glu  
 325 330 335

Asp Asn Ala

<210> 2186  
 <211> 339  
 <212> PRT  
 <213> Homo sapiens

<400> 2186  
 Met Ser Trp Ser Thr Phe Leu Leu Ala Glu Ala Cys Gly Phe Thr Gly  
 1 5 10 15

Val Val Ala Val Leu Phe Cys Gly Ile Thr Gln Ala His Tyr Thr Tyr  
 20 25 30

Asn Asn Leu Ser Val Glu Ser Arg Ser Arg Thr Lys Gln Leu Phe Glu  
 35 40 45

Val Leu His Phe Leu Ala Glu Asn Phe Ile Phe Ser Tyr Met Gly Leu  
 50 55 60

Ala Leu Phe Thr Phe Gln Lys His Val Phe Ser Pro Ile Phe Ile Ile  
 65 70 75 80

Gly Ala Phe Val Ala Ile Phe Leu Gly Arg Ala Ala His Ile Tyr Pro  
 85 90 95

Leu Ser Phe Phe Leu Asn Leu Gly Arg Arg His Lys Ile Gly Trp Asn  
 100 105 110

Phe Gln His Met Met Met Phe Ser Gly Leu Arg Gly Ala Met Ala Phe  
 115 120 125

Ala Leu Ala Ile Arg Asp Thr Ala Ser Tyr Ala Arg Gln Met Met Phe  
 130 135 140

Thr Thr Thr Leu Leu Ile Val Phe Phe Thr Val Trp Ile Ile Gly Gly  
 145 150 155 160

Gly Thr Thr Pro Met Leu Ser Trp Leu Asn Ile Arg Val Gly Val Asp  
 165 170 175

Pro Asp Gln Asp Pro Pro Pro Asn Asn Asp Ser Phe Gln Val Leu Gln  
 180 185 190

Gly Asp Gly Pro Asp Ser Ala Arg Gly Asn Arg Thr Lys Gln Glu Ser  
 195 200 205

Ala Trp Ile Phe Arg Leu Trp Tyr Ser Phe Asp His Asn Tyr Leu Lys  
       210                                  215                                  220  
 Pro Ile Leu Thr His Ser Gly Pro Pro Leu Thr Thr Thr Leu Pro Ala  
 225                                  230                                  235                                  240  
 Trp Cys Gly Leu Leu Ala Arg Cys Leu Thr Ser Pro Gln Val Tyr Asp  
                                   245                                  250                                  255  
 Asn Gln Glu Pro Leu Arg Glu Glu Asp Ser Asp Phe Ile Leu Thr Glu  
                                   260                                  265                                  270  
 Gly Asp Leu Thr Leu Thr Tyr Gly Asp Ser Thr Val Thr Ala Asn Gly  
                                   275                                  280                                  285  
 Ser Ser Ser Ser His Thr Ala Ser Thr Ser Leu Glu Gly Ser Arg Arg  
                                   290                                  295                                  300  
 Thr Lys Ser Ser Ser Glu Glu Val Leu Glu Arg Asp Leu Gly Met Gly  
 305                                  310                                  315                                  320  
 Asp Gln Lys Val Ser Ser Arg Gly Thr Arg Leu Val Phe Pro Leu Glu  
                                   325                                  330                                  335  
 Asp Asn Ala

<210> 2187

<211> 509

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (20)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (168)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (198)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (199)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (244)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE  
 <222> (246)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (294)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (301)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (303)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (493)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (498)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (499)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (505)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2187  
 Met Glu Glu Leu Ala Thr Glu Lys Glu Ala Glu Glu Ser His Arg Gln  
     1                    5                    10                    15  
 Asp Ser Val Xaa Leu Leu Thr Phe Ile Leu Leu Leu Thr Leu Thr Ile  
             20                    25                    30  
 Leu Thr Ile Trp Leu Phe Lys His Arg Arg Val Arg Phe Leu His Glu  
             35                    40                    45  
 Thr Gly Leu Ala Met Ile Tyr Gly Leu Ile Val Gly Val Ile Leu Arg  
             50                    55                    60  
 Tyr Gly Thr Pro Ala Thr Ser Gly Arg Asp Lys Ser Leu Ser Cys Thr  
             65                    70                    75                    80  
 Gln Glu Asp Arg Ala Phe Ser Thr Leu Leu Val Asn Val Ser Gly Lys  
                     85                    90                    95  
 Phe Phe Glu Tyr Thr Leu Lys Gly Glu Ile Ser Pro Gly Lys Ile Asn  
             100                    105                    110

Ser Val Glu Gln Asn Asp Met Leu Arg Lys Val Thr Phe Asp Pro Glu  
 115 120 125  
 Val Phe Phe Asn Ile Leu Leu Pro Pro Ile Ile Phe His Ala Gly Tyr  
 130 135 140  
 Ser Leu Lys Lys Arg His Phe Phe Arg Asn Leu Gly Ser Ile Leu Ala  
 145 150 155 160  
 Tyr Ala Phe Leu Gly Thr Ala Xaa Ser Cys Phe Ile Ile Gly Asn Leu  
 165 170 175  
 Met Tyr Gly Val Val Lys Leu Met Lys Ile Met Gly Gln Leu Ser Asp  
 180 185 190  
 Lys Phe Tyr Tyr Thr Xaa Xaa Leu Phe Phe Gly Ala Ile Ile Ser Ala  
 195 200 205  
 Thr Asp Pro Val Thr Val Leu Ala Ile Phe Asn Glu Leu His Ala Asp  
 210 215 220  
 Val Asp Leu Tyr Ala Leu Leu Phe Gly Glu Ser Val Leu Asn Asp Ala  
 225 230 235 240  
 Val Ala Ile Xaa Leu Xaa Ser Ser Ile Val Ala Tyr Gln Pro Ala Gly  
 245 250 255  
 Leu Asn Thr His Ala Phe Asp Ala Ala Ala Phe Phe Lys Ser Val Gly  
 260 265 270  
 Ile Phe Leu Gly Ile Phe Ser Gly Ser Phe Thr Met Gly Ala Val Thr  
 275 280 285  
 Gly Val Val Thr Ala Xaa Val Thr Lys Phe Thr Lys Xaa His Xaa Phe  
 290 295 300  
 Pro Leu Leu Glu Thr Ala Leu Phe Phe Leu Met Ser Trp Ser Thr Phe  
 305 310 315 320  
 Leu Leu Ala Glu Ala Cys Gly Phe Thr Gly Val Val Ala Val Leu Phe  
 325 330 335  
 Cys Gly Ile Thr Gln Ala His Tyr Thr Tyr Asn Asn Leu Ser Val Glu  
 340 345 350  
 Ser Arg Ser Arg Thr Lys Gln Leu Phe Glu Val Leu His Phe Leu Ala  
 355 360 365  
 Glu Asn Phe Ile Phe Ser Tyr Met Gly Leu Ala Leu Phe Thr Phe Gln  
 370 375 380  
 Lys His Val Phe Ser Pro Ile Phe Ile Ile Gly Ala Phe Val Ala Ile  
 385 390 395 400  
 Phe Leu Gly Arg Ala Ala His Ile Tyr Pro Leu Ser Phe Phe Leu Asn  
 405 410 415  
 Leu Gly Arg Arg His Lys Ile Gly Trp Asn Phe Gln His Met Met Met  
 420 425 430

Phe Ser Gly Leu Arg Gly Ala Met Ala Phe Ala Leu Ala Ile Arg Asp  
           435                                  440                                  445  
 Thr Ala Ser Tyr Ala Arg Gln Met Met Phe Thr Thr Thr Leu Leu Ile  
           450                                  455                                  460  
 Val Phe Phe Thr Val Trp Ile Ile Gly Gly Gly Thr Thr Pro Met Leu  
           465                                  470                                  475                                  480  
 Ser Trp Leu Asn Ile Arg Val Gly Val Asp Pro Asp Xaa Asp Pro Pro  
                                   485                                  490                                  495  
 Pro Xaa Xaa Asp Ser Phe Ala Phe Xaa Thr Glu Thr Ala  
                                   500                                  505

<210> 2188  
 <211> 146  
 <212> PRT  
 <213> Homo sapiens

<400> 2188  
 Met Thr Met Arg Ser Leu Leu Arg Thr Pro Phe Leu Cys Gly Leu Leu  
   1                                  5                                  10                                  15  
 Trp Ala Phe Cys Ala Pro Gly Ala Arg Ala Glu Glu Pro Ala Ala Ser  
           20                                  25                                  30  
 Phe Ser Gln Pro Gly Ser Met Gly Leu Asp Lys Asn Thr Val His Asp  
           35                                  40                                  45  
 Gln Glu His Ile Met Glu His Leu Glu Gly Val Ile Asn Lys Pro Glu  
           50                                  55                                  60  
 Ala Glu Met Ser Pro Gln Glu Leu Gln Leu His Tyr Phe Lys Met His  
           65                                  70                                  75                                  80  
 Asp Tyr Asp Gly Asn Asn Leu Leu Asp Gly Leu Glu Leu Ser Thr Ala  
                                   85                                  90                                  95  
 Ile Thr His Val His Lys Glu Glu Gly Ser Glu Gln Ala Pro Leu Met  
           100                                  105                                  110  
 Ser Glu Asp Glu Leu Ile Asn Ile Ile Asp Gly Val Leu Arg Asp Asp  
           115                                  120                                  125  
 Asp Lys Asn Asn Asp Gly Tyr Ile Asp Tyr Ala Glu Phe Ala Lys Ser  
           130                                  135                                  140  
 Leu Gln  
 145

<210> 2189  
 <211> 530  
 <212> PRT  
 <213> Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (488)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (490)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (494)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (495)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (505)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2189

Met	Glu	Phe	Gly	Leu	Thr	Trp	Val	Phe	Leu	Val	Ala	Leu	Leu	Arg	Gly
1				5					10					15	

Val	His	Cys	Gln	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Ala	Val	Val	Gln
			20					25					30		

Pro	Gly	Gly	Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe
		35				40						45			

Ser	Arg	Tyr	Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu
	50					55					60				

Gln	Trp	Leu	Ala	Leu	Val	Leu	His	Asp	Gly	Gly	Gln	Lys	Tyr	Asn	Glu
65					70					75					80

Asp	Val	Val	Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Asn	Asn
			85						90					95	

Lys	Val	Tyr	Leu	Gln	Met	Asp	Ser	Leu	Arg	Gly	Glu	Asp	Thr	Ala	Thr
			100					105					110		

Tyr	Tyr	Cys	Val	Arg	Gly	Met	Trp	Glu	Gln	Leu	Pro	Ser	Tyr	Tyr	Phe
		115					120					125			

Asp	Tyr	Trp	Gly	Gln	Gly	Thr	Leu	Val	Thr	Val	Ser	Ser	Ala	Ser	Pro
	130					135						140			

Thr	Ser	Pro	Lys	Val	Phe	Pro	Leu	Ser	Leu	Cys	Ser	Thr	Gln	Pro	Asp
145					150					155					160

Gly	Asn	Val	Val	Ile	Ala	Cys	Leu	Val	Gln	Gly	Phe	Phe	Pro	Gln	Glu
				165					170					175	

Pro Leu Ser Val Thr Trp Ser Glu Ser Gly Gln Gly Val Thr Ala Arg  
 180 185 190  
 Asn Phe Pro Pro Ser Gln Asp Ala Ser Gly Asp Leu Tyr Thr Thr Ser  
 195 200 205  
 Ser Gln Leu Thr Leu Pro Ala Thr Gln Cys Leu Ala Gly Lys Ser Val  
 210 215 220  
 Thr Cys His Val Lys His Tyr Thr Asn Pro Ser Gln Asp Val Thr Val  
 225 230 235 240  
 Pro Cys Pro Val Pro Ser Thr Pro Pro Thr Pro Ser Pro Ser Thr Pro  
 245 250 255  
 Pro Thr Pro Ser Pro Ser Cys Cys His Pro Arg Leu Ser Leu His Arg  
 260 265 270  
 Pro Ala Leu Glu Asp Leu Leu Leu Gly Ser Glu Ala Asn Leu Thr Cys  
 275 280 285  
 Thr Leu Thr Gly Leu Arg Asp Ala Ser Gly Val Thr Phe Thr Trp Thr  
 290 295 300  
 Pro Ser Ser Gly Lys Ser Ala Val Gln Gly Pro Pro Asp Arg Asp Leu  
 305 310 315 320  
 Cys Gly Cys Tyr Ser Val Ser Ser Val Leu Pro Gly Cys Ala Glu Pro  
 325 330 335  
 Trp Asn His Gly Lys Thr Phe Thr Cys Thr Ala Ala Tyr Pro Glu Ser  
 340 345 350  
 Lys Thr Pro Leu Thr Ala Thr Leu Ser Lys Ser Gly Asn Thr Phe Arg  
 355 360 365  
 Pro Glu Val His Leu Leu Pro Pro Pro Ser Glu Glu Leu Ala Leu Asn  
 370 375 380  
 Glu Leu Val Thr Leu Thr Cys Leu Ala Arg Gly Phe Ser Pro Lys Asp  
 385 390 395 400  
 Val Leu Val Arg Trp Leu Gln Gly Ser Gln Glu Leu Pro Arg Glu Lys  
 405 410 415  
 Tyr Leu Thr Trp Ala Ser Arg Gln Glu Pro Ser Gln Gly Thr Thr Thr  
 420 425 430  
 Phe Ala Val Thr Ser Ile Leu Arg Val Ala Ala Glu Asp Trp Lys Lys  
 435 440 445  
 Gly Asp Thr Phe Ser Cys Met Val Gly His Glu Ala Leu Pro Leu Ala  
 450 455 460  
 Phe Thr Gln Lys Thr Ile Asp Arg Leu Ala Gly Lys Pro Thr His Val  
 465 470 475 480  
 Asn Val Ser Val Val Met Ala Xaa Val Xaa Gly Pro Cys Xaa Xaa Ala  
 485 490 495



Ala Arg Leu Ser Pro Pro Leu Asn Xaa Leu His Ala Pro Pro Lys Lys  
 500 505 510

Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys Lys  
 515 520 525

Lys Lys  
 530

<210> 2190  
 <211> 265  
 <212> PRT  
 <213> Homo sapiens

<400> 2190

Met Gly Gly Gln Val Ala Gly Val Tyr Ala Ala Tyr Tyr Pro Ser Asp  
 1 5 10 15

Val Ser Ser Leu Cys Leu Val Cys Pro Ala Gly Leu Gln Tyr Ser Thr  
 20 25 30

Asp Asn Gln Phe Val Gln Arg Leu Lys Glu Leu Gln Gly Ser Ala Ala  
 35 40 45

Val Glu Lys Ile Pro Leu Ile Pro Ser Thr Pro Glu Glu Met Ser Glu  
 50 55 60

Met Leu Gln Leu Cys Ser Tyr Val Arg Phe Lys Val Pro Gln Gln Ile  
 65 70 75 80

Leu Gln Gly Leu Val Asp Val Arg Ile Pro His Asn Asn Phe Tyr Arg  
 85 90 95

Lys Leu Phe Leu Glu Ile Val Ser Glu Lys Ser Arg Tyr Ser Leu His  
 100 105 110

Gln Asn Met Asp Lys Ile Lys Val Pro Thr Gln Ile Ile Trp Gly Lys  
 115 120 125

Gln Asp Ala Gly Ala Gly Cys Val Trp Gly Arg His Val Gly Gln Val  
 130 135 140

Asn Cys Gln Leu Pro Gly Gly Ala Ser Gly Lys Leu Trp Ala Leu Ser  
 145 150 155 160

Ser Asp Gly Lys Thr Gln Glu Asp Ser Gln Ala His Asn Arg Leu Phe  
 165 170 175

Ser Phe Cys Ala Gln His Arg Gln Gln Gln Glu Ala Gly Leu Arg Pro  
 180 185 190

Arg Leu Gln Pro Ala Phe Cys Thr Gln His Leu Leu Pro Ser Pro Lys  
 195 200 205

Ser Asp Ala Ala Thr Thr Leu Arg Asp Pro Ala Pro Asn Ala Val Gly  
 210 215 220

Ala Pro Val Thr Leu Arg Lys Pro Val Pro Tyr Pro Trp Tyr Pro Arg

225					230					235					240
Phe	Pro	Arg	Ala	Leu	Gly	Thr	Thr	Arg	Lys	Pro	Pro	Arg	Tyr	Phe	Ser
				245					250					255	
Gln	Asn	Arg	Asn	Ser	Tyr	Gly	Thr	Lys							
			260					265							

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<210> 2191
<211> 99
<212> PRT
<213> Homo sapiens
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<400> 2191
Met Ala Val Trp Gly Asp Thr Glu Leu Ala Ala Gly Val Phe Cys Phe
  1             5             10             15

Phe Leu Phe Phe Cys Phe Leu Tyr Leu Ser Gly Thr Trp Asn Ala Ser
      20             25             30

Lys Thr Glu Leu Phe Thr Pro Leu Glu Arg Glu Leu Lys Pro Gly His
      35             40             45

Pro Ser Gly Met Leu Ser Gly Ser His Pro His Gly Ala Gln Gln Ala
      50             55             60

Lys Ser Thr Gly Leu Lys Leu Ser Leu Pro Ala Gln Gln Ser Glu Val
      65             70             75             80

Asp Leu Gly Cys Ser Ser Leu Val Trp Gly Gly Ala Ser Ala Ile Thr
      85             90             95

Glu Ala Leu

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<210> 2192
<211> 144
<212> PRT
<213> Homo sapiens
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<400> 2192
Met  Pro  Thr  Thr  Thr  Glu  Gln  Pro  Val  Thr  Thr  Thr  Phe  Pro  Val  Thr
  1              5              10              15

Thr  Gly  Leu  Lys  Pro  Thr  Val  Ala  Leu  Cys  Gln  Gln  Lys  Cys  Arg  Arg
          20              25              30

Thr  Gly  Thr  Leu  Glu  Gly  Asn  Tyr  Cys  Ser  Ser  Asp  Phe  Val  Leu  Ala
          35              40              45

Gly  Thr  Val  Ile  Thr  Thr  Ile  Thr  Arg  Asp  Gly  Ser  Leu  His  Ala  Thr
          50              55              60

Val  Ser  Ile  Ile  Asn  Ile  Tyr  Lys  Glu  Gly  Asn  Leu  Ala  Ile  Gln  Gln
          65              70              75              80

```

Ala	Gly	Lys	Asn	Met	Ser	Ala	Arg	Leu	Thr	Val	Val	Cys	Lys	Gln	Cys
				85					90					95	
Pro	Leu	Leu	Arg	Arg	Gly	Leu	Asn	Tyr	Ile	Ile	Met	Gly	Gln	Val	Gly
			100					105					110		
Glu	Asp	Gly	Arg	Gly	Lys	Ile	Met	Pro	Asn	Ser	Phe	Ile	Met	Met	Phe
		115					120					125			
Lys	Thr	Lys	Asn	Gln	Lys	Leu	Leu	Asp	Ala	Leu	Lys	Asn	Lys	Gln	Cys
	130					135					140				

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<210> 2193
<211> 294
<212> PRT
<213> Homo sapiens
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<220>
<221> SITE
<222> (93)
<223> Xaa equals any of the naturally occurring L-amino acids
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<220>
<221> SITE
<222> (97)
<223> Xaa equals any of the naturally occurring L-amino acids

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<400> 2193
Met Met Val Gln Met Ile Ser Asp Ala Asn Thr Ala Gly Asn Gly Phe
  1                      5          10          15
```

Met Ala Met Phe Ser Ala Ala Glu Pro Asn Glu Arg Gly Asp Gln Tyr  
20 25 30

Cys Gly Gly Leu Leu Asp Arg Pro Ser Gly Ser Phe Lys Thr Pro Asn  
35 40 45

Trp Pro Asp Arg Asp Tyr Pro Ala Gly Val Thr Cys Val Trp His Ile  
50 55 60

Val Ala Pro Lys Asn Gln Leu Ile Glu Leu Lys Phe Glu Lys Phe Asp  
65 70 75 80

Val Glu Arg Asp Asn Tyr Cys Arg Tyr Asp Tyr Val Xaa Val Phe Asn  
85 90 95

Xaa Gly Glu Val Asn Asp Ala Arg Arg Ile Gly Lys Tyr Cys Gly Asp  
100 105 110

Ser Pro Pro Ala Pro Ile Val Ser Glu Arg Asn Glu Leu Leu Ile Gln  
115 120 125

Phe Leu Ser Asp Leu Ser Leu Thr Ala Asp Gly Phe Ile Gly His Tyr  
130 135 140

Ile Phe Arg Pro Lys Lys Leu Pro Thr Thr Thr Glu Gln Pro Val Thr  
 145 150 155 160  
 Thr Thr Phe Pro Val Thr Thr Gly Leu Lys Pro Thr Val Ala Leu Cys  
 165 170 175  
 Gln Gln Lys Cys Arg Arg Thr Gly Thr Leu Glu Gly Asn Tyr Cys Ser  
 180 185 190  
 Ser Asp Phe Val Leu Ala Gly Thr Val Ile Thr Thr Ile Thr Arg Asp  
 195 200 205  
 Gly Ser Leu His Ala Thr Val Ser Ile Ile Asn Ile Tyr Lys Glu Gly  
 210 215 220  
 Asn Leu Ala Ile Gln Gln Ala Gly Lys Asn Met Ser Ala Arg Leu Thr  
 225 230 235 240  
 Val Val Cys Lys Gln Cys Pro Leu Leu Arg Arg Gly Leu Asn Tyr Ile  
 245 250 255  
 Ile Met Gly Gln Val Gly Glu Asp Gly Arg Gly Lys Ile Met Pro Asn  
 260 265 270  
 Ser Phe Ile Met Met Phe Lys Thr Lys Asn Gln Lys Leu Leu Asp Ala  
 275 280 285  
 Leu Lys Asn Lys Gln Cys  
 290

&lt;210&gt; 2194

&lt;211&gt; 487

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2194

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp  
 1 5 10 15  
 Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys  
 20 25 30  
 Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile  
 35 40 45  
 Ser Ser Gly Gly His Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys  
 50 55 60  
 Gly Leu Glu Trp Ile Gly Tyr Ile Ser Tyr Asn Gly Val Thr Tyr Tyr  
 65 70 75 80  
 Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Asp Thr Ser Gln  
 85 90 95  
 Asn Gln Phe Ser Leu Arg Leu Ser Ser Val Thr Ala Ala Asp Thr Ala  
 100 105 110  
 Val Tyr Tyr Cys Ala Lys Asp His Arg Ala Thr Arg Asp Gly Tyr Gln

115					120					125					
Leu	Glu	Tyr	Arg	Gly	Phe	Asp	Tyr	Trp	Gly	Gln	Gly	Ile	Leu	Val	Thr
130					135					140					
Val	Ser	Ser	Ala	Ser	Pro	Thr	Ser	Pro	Lys	Val	Phe	Pro	Leu	Ser	Leu
145					150					155					
Asp	Ser	Thr	Pro	Gln	Asp	Gly	Asn	Val	Val	Val	Ala	Cys	Leu	Val	Gln
165					170					175					
Gly	Phe	Phe	Pro	Gln	Glu	Pro	Leu	Ser	Val	Thr	Trp	Ser	Glu	Ser	Gly
180					185					190					
Gln	Asn	Val	Thr	Ala	Arg	Asn	Phe	Pro	Pro	Ser	Gln	Asp	Ala	Ser	Gly
195					200					205					
Asp	Leu	Tyr	Thr	Thr	Ser	Ser	Gln	Leu	Thr	Leu	Pro	Ala	Thr	Gln	Cys
210					215					220					
Pro	Asp	Gly	Lys	Ser	Val	Thr	Cys	His	Val	Lys	His	Tyr	Thr	Asn	Pro
225					230					235					
Ser	Gln	Asp	Val	Thr	Val	Pro	Cys	Pro	Val	Pro	Pro	Pro	Pro	Pro	Cys
245					250					255					
Cys	His	Pro	Arg	Leu	Ser	Leu	His	Arg	Pro	Ala	Leu	Glu	Asp	Leu	Leu
260					265					270					
Leu	Gly	Ser	Glu	Ala	Asn	Leu	Thr	Cys	Thr	Leu	Thr	Gly	Leu	Arg	Asp
275					280					285					
Ala	Ser	Gly	Ala	Thr	Phe	Thr	Trp	Thr	Pro	Ser	Ser	Gly	Lys	Ser	Ala
290					295					300					
Val	Gln	Gly	Pro	Pro	Glu	Arg	Asp	Leu	Cys	Gly	Cys	Tyr	Ser	Val	Ser
305					310					315					
Ser	Val	Leu	Pro	Gly	Cys	Ala	Gln	Pro	Trp	Asn	His	Gly	Glu	Thr	Phe
325					330					335					
Thr	Cys	Thr	Ala	Ala	His	Pro	Glu	Leu	Lys	Thr	Pro	Leu	Thr	Ala	Asn
340					345					350					
Ile	Thr	Lys	Ser	Gly	Asn	Thr	Phe	Arg	Pro	Glu	Val	His	Leu	Leu	Pro
355					360					365					
Pro	Pro	Ser	Glu	Glu	Leu	Ala	Leu	Asn	Glu	Leu	Val	Thr	Leu	Thr	Cys
370					375					380					
Leu	Ala	Arg	Gly	Phe	Ser	Pro	Lys	Asp	Val	Leu	Val	Arg	Trp	Leu	Gln
385					390					395					
Gly	Ser	Gln	Glu	Leu	Pro	Arg	Glu	Lys	Tyr	Leu	Thr	Trp	Ala	Ser	Arg
405					410					415					
Gln	Glu	Pro	Ser	Gln	Gly	Thr	Thr	Thr	Phe	Ala	Val	Thr	Ser	Ile	Leu
420					425					430					
Arg	Val	Ala	Ala	Glu	Asp	Trp	Lys	Lys	Gly	Asp	Thr	Phe	Ser	Cys	Met

435                      440                      445  
 Val Gly His Glu Ala Leu Pro Leu Ala Phe Thr Gln Lys Thr Ile Asp  
     450                      455                      460  
 Arg Leu Ala Gly Lys Pro Thr His Val Asn Val Ser Val Val Met Ala  
     465                      470                      475                      480  
 Glu Val Asp Gly Thr Cys Tyr  
                             485

<210> 2195  
 <211> 189  
 <212> PRT  
 <213> Homo sapiens

<400> 2195  
 Met Gly Gly Gln Val Ala Gly Val Tyr Ala Ala Tyr Tyr Pro Ser Asp  
     1                      5                      10                      15  
 Val Ser Ser Leu Cys Leu Val Cys Pro Ala Gly Leu Gln Tyr Ser Thr  
                             20                      25                      30  
 Asp Asn Gln Phe Val Gln Arg Leu Lys Glu Leu Gln Gly Ser Ala Ala  
                             35                      40                      45  
 Val Glu Lys Ile Pro Leu Ile Pro Ser Thr Pro Glu Glu Met Ser Glu  
     50                      55                      60  
 Met Leu Gln Leu Cys Ser Tyr Val Arg Phe Lys Val Pro Gln Gln Ile  
     65                      70                      75                      80  
 Leu Gln Gly Leu Val Asp Val Arg Ile Pro His Asn Asn Phe Tyr Arg  
                             85                      90                      95  
 Lys Leu Phe Leu Glu Ile Val Ser Glu Lys Ser Arg Tyr Ser Leu His  
                             100                      105                      110  
 Gln Asn Met Asp Lys Ile Lys Val Pro Thr Gln Ile Ile Trp Gly Lys  
     115                      120                      125  
 Gln Asp Gln Val Leu Asp Val Ser Gly Ala Asp Met Leu Ala Lys Ser  
     130                      135                      140  
 Ile Ala Asn Cys Gln Val Glu Leu Leu Glu Asn Cys Gly His Ser Val  
     145                      150                      155                      160  
 Val Met Glu Arg Pro Arg Lys Thr Ala Lys Leu Ile Ile Asp Phe Leu  
                             165                      170                      175  
 Ala Ser Val His Asn Thr Asp Asn Asn Lys Lys Leu Asp  
                             180                      185

<210> 2196  
 <211> 298  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2196

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Met Lys Thr Leu Gln Ser Thr Leu Leu Leu Leu Leu Val Pro Leu
 1              5              10              15

Ile Lys Pro Ala Pro Pro Thr Gln Gln Asp Ser Arg Ile Ile Tyr Asp
      20              25              30

Tyr Gly Thr Asp Asn Phe Glu Glu Ser Ile Phe Ser Gln Asp Tyr Glu
      35              40              45

Asp Lys Tyr Leu Asp Gly Lys Asn Ile Lys Glu Lys Glu Thr Val Ile
      50              55              60

Ile Pro Asn Glu Lys Ser Leu Gln Leu Gln Lys Asp Glu Ala Ile Thr
      65              70              75              80

Pro Leu Pro Pro Lys Lys Glu Asn Asp Glu Met Pro Thr Cys Leu Leu
      85              90              95

Cys Val Cys Leu Ser Gly Ser Val Tyr Cys Glu Glu Val Asp Ile Asp
      100              105              110

Ala Val Pro Pro Leu Pro Lys Glu Ser Ala Tyr Leu Tyr Ala Arg Phe
      115              120              125

Asn Lys Ile Lys Lys Leu Thr Ala Lys Asp Phe Ala Asp Ile Pro Asn
      130              135              140

Leu Arg Arg Leu Asp Phe Thr Gly Asn Leu Ile Glu Asp Ile Glu Asp
      145              150              155              160

Gly Thr Phe Ser Lys Leu Ser Leu Leu Glu Glu Leu Ser Leu Ala Glu
      165              170              175

Asn Gln Leu Leu Lys Leu Pro Val Leu Pro Pro Lys Leu Thr Leu Phe
      180              185              190

Asn Ala Lys Tyr Asn Lys Ile Lys Ser Arg Gly Ile Lys Ala Asn Ala
      195              200              205

Phe Lys Lys Leu Asn Asn Leu Thr Phe Leu Tyr Leu Asp His Asn Ala
      210              215              220

Leu Glu Ser Val Pro Leu Asn Leu Pro Glu Ser Leu Arg Val Ile His
      225              230              235              240

Leu Gln Phe Asn Asn Ile Ala Ser Ile Thr Asp Asp Thr Phe Cys Lys
      245              250              255

Ala Asn Asp Thr Ser Tyr Ile Arg Asp Arg Ile Glu Glu Ile Arg Leu
      260              265              270

Glu Gly Asn Pro Ile Val Leu Gly Lys His Pro Asn Ser Phe Ile Cys
      275              280              285

Leu Lys Arg Leu Pro Ile Gly Ser Tyr Phe
      290              295

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&lt;210&gt; 2197

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2197

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Met Lys Thr Leu Gln Ser Thr Leu Leu Leu Leu Leu Val Pro Leu
  1              5              10              15

Ile Lys Pro Ala Pro Pro Thr Gln Gln Asp Ser Arg Ile Ile Tyr Asp
      20              25              30

Tyr Gly Thr Asp Asn Phe Glu Glu Ser Ile Phe Ser Gln Asp Tyr Glu
      35              40              45

Asp Lys Tyr Leu Asp Gly Lys Asn Ile Lys Glu Lys Glu Thr Val Ile
      50              55              60

Ile Pro Asn Glu Lys Ser Leu Gln Leu Gln Lys Asp Glu Ala Ile Thr
      65              70              75              80

Pro Leu Pro Pro Lys Lys Glu Asn Asp Glu Met Pro Thr Cys Leu Leu
      85              90              95

Cys Val Cys Leu Ser Gly Ser Val Tyr Cys Glu Glu Val Asp Ile Asp
      100              105              110

Ala Val Pro Pro Leu Pro Lys Glu Ser Ala Tyr Leu Tyr Ala Arg Phe
      115              120              125

Asn Lys Ile Lys Lys Leu Thr Ala Lys Asp Phe Ala Asp Ile Pro Asn
      130              135              140

Leu Arg Arg Leu Asp Phe Thr Gly Asn Leu Ile Glu Asp Ile Glu Asp
      145              150              155              160

Gly Thr Phe Ser Lys Leu Ser Leu Leu Glu Glu Leu Ser Leu Ala Glu
      165              170              175

Asn Gln Leu Leu Lys Leu Pro Val Leu Pro Pro Lys Leu Thr Leu Phe
      180              185              190

Asn Ala Lys Tyr Asn Lys Ile Lys Ser Arg Gly Ile Lys Ala Asn Ala
      195              200              205

Phe Lys Lys Leu Asn Asn Leu Thr Phe Leu Tyr Leu Asp His Asn Ala
      210              215              220

Leu Glu Ser Val Pro Leu Asn Leu Pro Glu Ser Leu Arg Val Ile His
      225              230              235              240

Leu Gln Phe Asn Asn Ile Ala Ser Ile Thr Asp Asp Thr Phe Cys Lys
      245              250              255

Ala Asn Asp Thr Ser Tyr Ile Arg Asp Arg Ile Glu Glu Ile Arg Leu
      260              265              270

Glu Gly Asn Pro Ile Val Leu Gly Lys His Pro Asn Ser Phe Ile Cys

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275                      280                      285  
 Leu Lys Arg Leu Pro Ile Gly Ser Tyr Phe  
     290                      295  
  
 <210> 2198  
 <211> 42  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 2198  
 Met Glu Cys Lys Lys Arg Ile Gln Leu Ile Met Leu Ala Ser Ile Val  
     1                      5                      10                      15  
  
 Arg Leu Pro Pro Thr Glu Gln Ser Gly Leu Leu Lys Thr Arg Phe His  
             20                      25                      30  
  
 Asn Phe Cys Gln Arg Asn Leu Gln Ser Ser  
             35                      40  
  
  
 <210> 2199  
 <211> 472  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 2199  
 Met Ile Arg Thr Arg Arg Gly Trp Ser Ser Met Trp Pro Trp Ile Gly  
     1                      5                      10                      15  
  
 Val Gly Tyr Leu Ala Gly Cys Leu Val His Ala Leu Gly Glu Lys Gln  
             20                      25                      30  
  
 Pro Glu Leu Gln Ile Ser Glu Arg Asp Val Leu Cys Val Gln Ile Ala  
             35                      40                      45  
  
 Gly Leu Cys His Asp Leu Gly His Gly Pro Phe Ser His Met Phe Asp  
             50                      55                      60  
  
 Gly Arg Phe Ile Pro Leu Ala Arg Pro Glu Val Lys Trp Thr His Glu  
             65                      70                      75                      80  
  
 Gln Gly Ser Val Met Met Phe Glu His Leu Ile Asn Ser Asn Gly Ile  
                     85                      90                      95  
  
 Lys Pro Val Met Glu Gln Tyr Gly Leu Ile Pro Glu Glu Asp Ile Cys  
             100                      105                      110  
  
 Phe Ile Lys Glu Gln Ile Val Gly Pro Leu Glu Ser Pro Val Glu Asp  
             115                      120                      125  
  
 Ser Leu Trp Pro Tyr Lys Gly Arg Pro Glu Asn Lys Ser Phe Leu Tyr  
             130                      135                      140  
  
 Glu Ile Val Ser Asn Lys Arg Asn Gly Ile Asp Val Asp Lys Trp Asp  
     145                      150                      155                      160

Tyr Phe Ala Arg Asp Cys His His Leu Gly Ile Gln Asn Asn Phe Asp  
 165 170 175  
 Tyr Lys Arg Phe Ile Lys Phe Ala Arg Val Cys Glu Val Asp Asn Glu  
 180 185 190  
 Leu Arg Ile Cys Ala Arg Asp Lys Glu Val Gly Asn Leu Tyr Asp Met  
 195 200 205  
 Phe His Thr Arg Asn Ser Leu His Arg Arg Ala Tyr Gln His Lys Val  
 210 215 220  
 Gly Asn Ile Ile Asp Thr Met Ile Thr Asp Ala Phe Leu Glu Ala Asp  
 225 230 235 240  
 Asp Tyr Ile Glu Ile Thr Gly Ala Gly Gly Lys Lys Tyr Arg Ile Ser  
 245 250 255  
 Thr Ala Ile Asp Asp Met Glu Ala Tyr Thr Lys Leu Thr Asp Asn Ile  
 260 265 270  
 Phe Leu Glu Ile Leu Tyr Ser Thr Asp Pro Lys Leu Lys Asp Ala Arg  
 275 280 285  
 Glu Ile Leu Lys Gln Ile Glu Tyr Arg Asn Leu Phe Lys Tyr Val Gly  
 290 295 300  
 Glu Thr Gln Pro Thr Gly Gln Ile Lys Ile Lys Arg Glu Asp Tyr Glu  
 305 310 315 320  
 Ser Leu Pro Lys Glu Val Ala Ser Ala Lys Pro Lys Val Leu Leu Asp  
 325 330 335  
 Val Lys Leu Lys Ala Glu Asp Phe Ile Val Asp Val Ile Asn Met Asp  
 340 345 350  
 Tyr Gly Met Gln Glu Lys Asn Pro Ile Asp His Val Ser Phe Tyr Cys  
 355 360 365  
 Lys Thr Ala Pro Asn Arg Ala Ile Arg Ile Thr Lys Asn Gln Val Ser  
 370 375 380  
 Gln Leu Leu Pro Glu Lys Phe Ala Glu Gln Leu Ile Arg Val Tyr Cys  
 385 390 395 400  
 Lys Lys Val Asp Arg Lys Ser Leu Tyr Ala Ala Arg Gln Tyr Phe Val  
 405 410 415  
 Gln Trp Cys Ala Asp Arg Asn Phe Thr Lys Pro Gln Asp Gly Asp Val  
 420 425 430  
 Ile Ala Pro Leu Ile Thr Pro Gln Lys Lys Glu Trp Asn Asp Ser Thr  
 435 440 445  
 Ser Val Gln Asn Pro Thr Arg Leu Arg Glu Ala Ser Lys Ser Arg Val  
 450 455 460  
 Gln Leu Phe Lys Asp Asp Pro Met  
 465 470

<210> 2200  
 <211> 626  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (353)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (354)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (363)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2200  
 Met Gln Arg Ala Asp Ser Glu Gln Pro Ser Lys Arg Pro Arg Cys Asp  
     1                    5                    10                    15  
 Asp Ser Pro Arg Thr Pro Ser Asn Thr Pro Ser Ala Glu Ala Asp Trp  
             20                    25                    30  
 Ser Pro Gly Leu Glu Leu His Pro Asp Tyr Lys Thr Trp Gly Pro Glu  
             35                    40                    45  
 Gln Val Cys Ser Phe Leu Arg Arg Gly Gly Phe Glu Glu Pro Val Leu  
     50                    55                    60  
 Leu Lys Asn Ile Arg Glu Asn Glu Ile Thr Gly Ala Leu Leu Pro Cys  
     65                    70                    75                    80  
 Leu Asp Glu Ser Arg Phe Glu Asn Leu Gly Val Ser Ser Leu Gly Glu  
             85                    90                    95  
 Arg Lys Lys Leu Leu Ser Tyr Ile Gln Arg Leu Val Gln Ile His Val  
             100                    105                    110  
 Asp Thr Met Lys Val Ile Asn Asp Pro Ile His Gly His Ile Glu Leu  
             115                    120                    125  
 His Pro Leu Leu Val Arg Ile Ile Asp Thr Pro Gln Phe Gln Arg Leu  
     130                    135                    140  
 Arg Tyr Ile Lys Gln Leu Gly Gly Gly Tyr Tyr Val Phe Pro Gly Ala  
     145                    150                    155                    160  
 Ser His Asn Arg Phe Glu His Ser Leu Gly Val Gly Tyr Leu Ala Gly  
             165                    170                    175  
 Cys Leu Val His Ala Leu Gly Glu Lys Gln Pro Glu Leu Gln Ile Ser  
             180                    185                    190  
 Glu Arg Asp Val Leu Cys Val Gln Ile Ala Gly Leu Cys His Asp Leu

195					200					205					
Gly	His	Gly	Pro	Phe	Ser	His	Met	Phe	Asp	Gly	Arg	Phe	Ile	Pro	Leu
210					215					220					
Ala	Arg	Pro	Glu	Val	Lys	Trp	Thr	His	Glu	Gln	Gly	Ser	Val	Met	Met
225					230					235					240
Phe	Glu	His	Leu	Ile	Asn	Ser	Asn	Gly	Ile	Lys	Pro	Val	Met	Glu	Gln
				245					250					255	
Tyr	Gly	Leu	Ile	Pro	Glu	Glu	Asp	Ile	Cys	Phe	Ile	Lys	Glu	Gln	Ile
			260					265					270		
Val	Gly	Pro	Leu	Glu	Ser	Pro	Val	Glu	Asp	Ser	Leu	Trp	Pro	Tyr	Lys
		275					280					285			
Gly	Arg	Pro	Glu	Asn	Lys	Ser	Phe	Leu	Tyr	Glu	Ile	Val	Ser	Asn	Lys
290					295					300					
Arg	Asn	Gly	Ile	Asp	Val	Asp	Lys	Trp	Asp	Tyr	Phe	Ala	Arg	Asp	Cys
305				310						315					320
His	His	Leu	Gly	Ile	Gln	Asn	Asn	Phe	Asp	Tyr	Lys	Arg	Phe	Ile	Lys
				325					330					335	
Phe	Ala	Arg	Val	Cys	Glu	Val	Asp	Asn	Glu	Leu	Arg	Ile	Cys	Ala	Arg
			340					345					350		
Xaa	Xaa	Glu	Val	Gly	Asn	Leu	Tyr	Asp	Met	Xaa	His	Thr	Arg	Asn	Ser
		355					360					365			
Leu	His	Arg	Arg	Ala	Tyr	Gln	His	Lys	Val	Gly	Asn	Ile	Ile	Asp	Thr
		370				375					380				
Met	Ile	Thr	Asp	Ala	Phe	Leu	Lys	Ala	Asp	Asp	Tyr	Ile	Glu	Ile	Thr
385				390						395					400
Gly	Ala	Gly	Gly	Lys	Lys	Tyr	Arg	Ile	Ser	Thr	Ala	Ile	Asp	Asp	Met
				405					410					415	
Glu	Ala	Tyr	Thr	Lys	Leu	Thr	Asp	Asn	Ile	Phe	Leu	Glu	Ile	Leu	Tyr
			420					425					430		
Ser	Thr	Asp	Pro	Lys	Leu	Lys	Asp	Ala	Arg	Glu	Ile	Leu	Lys	Gln	Ile
		435					440					445			
Glu	Tyr	Arg	Asn	Leu	Phe	Lys	Tyr	Val	Gly	Glu	Thr	Gln	Pro	Thr	Gly
	450					455					460				
Gln	Ile	Lys	Ile	Lys	Arg	Glu	Asp	Tyr	Glu	Ser	Leu	Pro	Lys	Glu	Val
465				470						475					480
Ala	Ser	Ala	Lys	Pro	Lys	Val	Leu	Leu	Asp	Val	Lys	Leu	Lys	Ala	Glu
			485					490						495	
Asp	Phe	Ile	Val	Asp	Val	Ile	Asn	Met	Asp	Tyr	Gly	Met	Gln	Glu	Lys
			500					505					510		
Asn	Pro	Ile	Asp	His	Val	Ser	Phe	Tyr	Cys	Lys	Thr	Ala	Pro	Asn	Arg

515                                      520                                      525  
 Ala Ile Arg Ile Thr Lys Asn Gln Val Ser Gln Leu Leu Pro Glu Lys  
     530                                      535                                      540  
 Phe Ala Glu Gln Leu Ile Arg Val Tyr Cys Lys Lys Val Asp Arg Lys  
     545                                      550                                      555                                      560  
 Ser Leu Tyr Ala Ala Arg Gln Tyr Phe Val Gln Trp Cys Ala Asp Arg  
                                     565                                      570                                      575  
 Asn Phe Thr Lys Pro Gln Asp Gly Asp Val Ile Ala Pro Leu Ile Thr  
                                     580                                      585                                      590  
 Pro Gln Lys Lys Glu Trp Asn Asp Ser Thr Ser Val Gln Asn Pro Thr  
                                     595                                      600                                      605  
 Arg Leu Arg Glu Ala Ser Lys Ser Arg Val Gln Leu Phe Lys Asp Asp  
     610                                      615                                      620  
 Pro Met  
 625

&lt;210&gt; 2201

&lt;211&gt; 245

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (128)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2201

Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser  
     1                                      5                                      10                                      15  
 Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys  
                                     20                                      25                                      30  
 Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys  
                                     35                                      40                                      45  
 Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln  
     50                                      55                                      60  
 Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly  
     65                                      70                                      75                                      80  
 Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile  
                                     85                                      90                                      95  
 Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln  
                                     100                                      105                                      110  
 Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Xaa  
     115                                      120                                      125

Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr  
 130 135 140  
 Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr  
 145 150 155 160  
 Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val  
 165 170 175  
 Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr  
 180 185 190  
 Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln  
 195 200 205  
 Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly  
 210 215 220  
 His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu  
 225 230 235 240  
 Ile Phe Pro Ser Ala  
 245

<210> 2202  
 <211> 32  
 <212> PRT  
 <213> Homo sapiens

<400> 2202  
 Met Gly Val Asn Lys Val Leu Phe Thr Phe Phe Phe Phe Ser Ser Leu  
 1 5 10 15  
 Leu Asp Gly Val Gly Thr Ser His Ser Leu Ala Ser Phe Pro His Thr  
 20 25 30

<210> 2203  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 2203  
 Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser  
 1 5 10 15  
 Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys  
 20 25 30  
 Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys  
 35 40 45  
 Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln  
 50 55 60

Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly  
 65 70 75 80  
 Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile  
 85 90 95  
 Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln  
 100 105 110  
 Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly  
 115 120 125  
 Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr  
 130 135 140  
 Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr  
 145 150 155 160  
 Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val  
 165 170 175  
 Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr  
 180 185 190  
 Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln  
 195 200 205  
 Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly  
 210 215 220  
 His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu  
 225 230 235 240  
 Ile Phe Pro Ser Ala  
 245

<210> 2204  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 2204  
 Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser  
 1 5 10 15  
 Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys  
 20 25 30  
 Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys  
 35 40 45  
 Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln  
 50 55 60  
 Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly  
 65 70 75 80

Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile  
                     85                    90                    95  
 Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln  
                     100                    105                    110  
 Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly  
                     115                    120                    125  
 Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr  
                     130                    135                    140  
 Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr  
                     145                    150                    155                    160  
 Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val  
                     165                    170                    175  
 Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr  
                     180                    185                    190  
 Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln  
                     195                    200                    205  
 Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly  
                     210                    215                    220  
 His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu  
                     225                    230                    235                    240  
 Ile Phe Pro Ser Ala  
                     245

<210> 2205  
 <211> 245  
 <212> PRT  
 <213> Homo sapiens

<400> 2205

Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser  
     1                    5                    10                    15  
 Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys  
                     20                    25                    30  
 Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys  
                     35                    40                    45  
 Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln  
                     50                    55                    60  
 Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly  
                     65                    70                    75                    80  
 Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile  
                     85                    90                    95  
 Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln



100	105	110
Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly		
115	120	125
Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr		
130	135	140
Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr		
145	150	155
Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val		
165	170	175
Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr		
180	185	190
Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln		
195	200	205
Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly		
210	215	220
His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu		
225	230	235
Ile Phe Pro Ser Ala		
245		

&lt;210&gt; 2206

&lt;211&gt; 245

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2206

Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser		
1	5	10
Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys		
20	25	30
Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Leu Lys		
35	40	45
Gly Glu Gln Gly Glu Pro Gly Ala Pro Gly Ile Arg Thr Gly Ile Gln		
50	55	60
Gly Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly		
65	70	75
Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile		
85	90	95
Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln		
100	105	110
Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly		
115	120	125

Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr  
 130 135 140  
 Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr  
 145 150 155 160  
 Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val  
 165 170 175  
 Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr  
 180 185 190  
 Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln  
 195 200 205  
 Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly  
 210 215 220  
 His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu  
 225 230 235 240  
 Ile Phe Pro Ser Ala  
 245

<210> 2207  
 <211> 229  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (47)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (49)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2207  
 Met Glu Gly Pro Arg Gly Trp Leu Val Leu Cys Val Leu Ala Ile Ser  
 1 5 10 15  
 Leu Ala Ser Met Val Thr Glu Asp Leu Cys Arg Ala Pro Asp Gly Lys  
 20 25 30  
 Lys Gly Glu Ala Gly Arg Pro Gly Arg Arg Gly Arg Pro Gly Xaa Lys  
 35 40 45  
 Xaa Leu Lys Gly Asp Gln Gly Glu Pro Gly Pro Ser Gly Asn Pro Gly  
 50 55 60  
 Lys Val Gly Tyr Pro Gly Pro Ser Gly Pro Leu Gly Ala Arg Gly Ile  
 65 70 75 80  
 Pro Gly Ile Lys Gly Thr Lys Gly Ser Pro Gly Asn Ile Lys Asp Gln  
 85 90 95

Pro Arg Pro Ala Phe Ser Ala Ile Arg Arg Asn Pro Pro Met Gly Gly  
 100 105 110

Asn Val Val Ile Phe Asp Thr Val Ile Thr Asn Gln Glu Glu Pro Tyr  
 115 120 125

Gln Asn His Ser Gly Arg Phe Val Cys Thr Val Pro Gly Tyr Tyr Tyr  
 130 135 140

Phe Thr Phe Gln Val Leu Ser Gln Trp Glu Ile Cys Leu Ser Ile Val  
 145 150 155 160

Ser Ser Ser Arg Gly Gln Val Arg Arg Ser Leu Gly Phe Cys Asp Thr  
 165 170 175

Thr Asn Lys Gly Leu Phe Gln Val Val Ser Gly Gly Met Val Leu Gln  
 180 185 190

Leu Gln Gln Gly Asp Gln Val Trp Val Glu Lys Asp Pro Lys Lys Gly  
 195 200 205

His Ile Tyr Gln Gly Ser Glu Ala Asp Ser Val Phe Ser Gly Phe Leu  
 210 215 220

Ile Phe Pro Ser Ala  
 225

<210> 2208  
 <211> 207  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (75)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (77)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (112)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2208  
 Met Asp Val Gly Pro Ser Ser Leu Pro His Leu Gly Leu Lys Leu Leu  
 1 5 10 15

Leu Leu Leu Leu Leu Leu Pro Leu Arg Gly Gln Ala Asn Thr Gly Cys  
 20 25 30

Tyr Gly Ile Pro Gly Met Pro Gly Leu Pro Gly Ala Pro Gly Lys Asp  
 35 40 45

Gly Tyr Asp Gly Leu Pro Gly Pro Lys Gly Glu Pro Gly Ile Pro Ala  
           50                          55                          60  
 Ile Pro Gly Ile Arg Gly Pro Lys Gly Gln Xaa Gly Xaa Ala Glu Ile  
       65                          70                          75                          80  
 Pro Val Ser Val His Gly His Ser Ala Asp Pro Pro Ala Pro Cys Thr  
                           85                          90                          95  
 Gln Gln Pro Asp Gln Ile Gln Arg Gly Pro His Gln Pro Ala Glu Xaa  
                           100                          105                          110  
 Tyr Asp Thr Ser Thr Gly Lys Phe Thr Cys Lys Val Pro Gly Leu Tyr  
       115                          120                          125  
 Tyr Phe Val Tyr His Ala Ser His Thr Ala Asn Leu Cys Val Leu Leu  
       130                          135                          140  
 Tyr Arg Ser Gly Val Lys Val Val Thr Phe Cys Gly His Thr Ser Lys  
       145                          150                          155                          160  
 Thr Asn Gln Val Asn Ser Gly Gly Val Leu Leu Arg Leu Gln Val Gly  
                           165                          170                          175  
 Glu Glu Val Trp Leu Ala Val Asn Asp Tyr Tyr Asp Met Val Gly Ile  
                           180                          185                          190  
 Gln Gly Ser Asp Ser Val Phe Ser Gly Phe Leu Leu Phe Pro Asp  
                           195                          200                          205

&lt;210&gt; 2209

&lt;211&gt; 235

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2209

Met Asp Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp  
       1                          5                          10                          15  
 Leu Arg Gly Ala Arg Cys Asp Met Gln Met Thr Gln Ser Pro Ser Ser  
                           20                          25                          30  
 Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Thr Ser  
       35                          40                          45  
 Gln Ser Ile Gly Lys Phe Leu Asn Trp Tyr Gln Gln Lys Pro Gly Gln  
       50                          55                          60  
 Ala Pro Lys Leu Leu Ile Ser Gly Ala Ser Ile Leu Gln Thr Gly Val  
       65                          70                          75                          80  
 Pro Ser Arg Phe Ser Gly Ser Gly Ser Ala Thr Tyr Phe Thr Leu Thr  
                           85                          90                          95  
 Ile Asn Asp Leu His Pro Glu Asp Ser Ala Thr Tyr Tyr Cys Gln Gln  
                           100                          105                          110  
 Asp Tyr Thr Thr Pro Leu Phe Gly Gln Gly Thr Lys Val Glu Ile Lys

115	120	125
Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu		
130	135	140
Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe		
145	150	155
Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln		
165	170	175
Ser Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser		
180	185	190
Thr Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu		
195	200	205
Lys His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser		
210	215	220
Pro Val Thr Lys Ser Phe Asn Arg Gly Glu Cys		
225	230	235

&lt;210&gt; 2210

&lt;211&gt; 234

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (120)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2210

Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp Leu Ser
1 5 10 15
Gly Ala Arg Cys Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser
20 25 30
Ala Ser Leu Gly Asp Ser Val Thr Ile Thr Cys Gln Ala Ser Gln Asp
35 40 45
Ile Ala Asn Tyr Leu Asn Trp Tyr Gln Gln Lys Pro Gly Lys Pro Pro
50 55 60
Lys Leu Val Ile Phe Asp Gly Ser Ile Leu His Thr Gly Val Pro Ser
65 70 75 80
Arg Phe Ser Gly Gly Gly Ser Gly Thr His Phe Thr Phe Thr Ile Asn
85 90 95
Asn Leu Gln Pro Asp Asp Val Ala Thr Tyr Ser Cys Gln Gln Tyr Asn
100 105 110
Thr Phe Pro Leu Thr Phe Gly Xaa Gly Thr Lys Val Glu Ile Lys Arg
115 120 125

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln  
 130 135 140  
 Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr  
 145 150 155 160  
 Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser  
 165 170 175  
 Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr  
 180 185 190  
 Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys  
 195 200 205  
 His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro  
 210 215 220  
 Val Thr Lys Ser Phe Asn Arg Gly Glu Cys  
 225 230

&lt;210&gt; 2211

&lt;211&gt; 206

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2211

Met Asp Val Gly Pro Ser Ser Leu Pro His Leu Gly Leu Lys Leu Leu  
 1 5 10 15  
 Leu Leu Leu Leu Leu Leu Pro Leu Arg Gly Gln Ala Asn Thr Gly Cys  
 20 25 30  
 Tyr Gly Ile Pro Gly Met Pro Gly Leu Pro Gly Ala Pro Gly Lys Asp  
 35 40 45  
 Gly Tyr Asp Gly Leu Pro Gly Pro Lys Gly Glu Pro Gly Ile Pro Ala  
 50 55 60  
 Ile Pro Gly Ile Arg Gly Pro Lys Gly Arg Tyr Lys Gln Lys Phe Gln  
 65 70 75 80  
 Ser Val Phe Thr Val Thr Arg Gln Thr His Gln Pro Pro Ala Pro Asn  
 85 90 95  
 Ser Leu Ile Arg Phe Asn Ala Val Leu Thr Asn Pro Gln Gly Asp Tyr  
 100 105 110  
 Asp Thr Ser Thr Gly Lys Phe Thr Cys Lys Val Pro Gly Leu Tyr Tyr  
 115 120 125  
 Phe Val Tyr His Ala Ser His Thr Ala Asn Leu Cys Val Leu Leu Tyr  
 130 135 140  
 Arg Ser Gly Val Lys Val Val Thr Phe Cys Gly His Thr Ser Lys Thr  
 145 150 155 160  
 Asn Gln Val Asn Ser Gly Gly Val Leu Leu Arg Leu Gln Val Gly Glu

	165		170		175
Glu Val Trp	Leu Ala Val Asn Asp	Tyr Tyr Asp Met Val	Gly Ile Gln		
	180	185	190		
Gly Ser Asp	Ser Val Phe Ser	Gly Phe Leu Leu Phe	Pro Asp		
	195	200	205		
<210> 2212					
<211> 208					
<212> PRT					
<213> Homo sapiens					
<400> 2212					
Met Asp Val	Gly Pro Ser Ser Leu Pro	His Leu Gly Leu Lys Leu			
1	5	10	15		
Leu Leu Leu	Leu Leu Pro Leu Arg	Gly Gln Ala Asn Thr Gly Cys			
	20	25	30		
Tyr Gly Ile	Pro Gly Met Pro Gly Leu	Pro Gly Ala Pro Gly Lys Asp			
	35	40	45		
Gly Tyr Asp	Gly Leu Pro Gly Pro Lys Gly	Glu Pro Gly Ile Pro Ala			
	50	55	60		
Ile Pro Gly	Ile Arg Gly Pro Lys Gly	Gln Lys Gly Glu Pro Gly Leu			
	65	70	75		80
Pro Gly His	Pro Gly Lys Asn Gly Pro Met	Gly Pro Pro Gly Met Pro			
	85	90	95		
Gly Val Pro	Gly Pro Met Gly Ile Pro Gly	Glu Pro Gly Glu Glu Gly			
	100	105	110		
Arg Tyr Lys	Gln Lys Phe Gln Ser Val Phe	Thr Val Thr Arg Gln Thr			
	115	120	125		
His Gln Pro	Pro Ala Pro Asn Ser Leu Ile	Arg Phe Asn Ala Val Leu			
	130	135	140		
Thr Asn Pro	Gln Glu Ile Met Thr Arg Ala	Leu Ala Ser Ser Pro Ala			
	145	150	155		160
Lys Ser Pro	Ala Ser Thr Thr Leu Ser Thr	Thr Arg Arg Ile Gln Pro			
	165	170	175		
Thr Cys Ala	Cys Cys Cys Thr Ala Ala	Ala Ser Lys Trp Ser Pro Ser			
	180	185	190		
Val Ala Thr	Arg Pro Lys Pro Ile Arg Ser	Thr Arg Ala Val Cys Cys			
	195	200	205		

<210> 2213  
 <211> 263  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (27)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (112)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2213

Met	Cys	Leu	Leu	Gly	Gly	Leu	Ser	Ala	Pro	Pro	Leu	Leu	Leu	Leu	Pro
1				5					10					15	
Leu	Leu	Pro	Leu	Leu	Leu	Cys	Pro	Pro	Thr	Xaa	Gln	Gly	Asp	Cys	Ser
			20					25					30		
Phe	Pro	Pro	Glu	Leu	Pro	Asn	Ala	Ile	Gln	Ser	Val	Gly	Asp	Gln	Gln
			35				40					45			
Ser	Phe	Pro	Glu	Lys	Phe	Thr	Val	Thr	Tyr	Lys	Cys	Lys	Glu	Gly	Phe
	50					55					60				
Val	Lys	Val	Pro	Gly	Lys	Ala	Asp	Ser	Val	Val	Cys	Leu	Asn	Asn	Lys
65					70					75					80
Trp	Ser	Glu	Val	Ala	Glu	Phe	Cys	Asn	Arg	Ser	Cys	Asp	Val	Pro	Thr
				85					90					95	
Arg	Leu	Gln	Phe	Ala	Ser	Leu	Lys	Lys	Ser	Phe	Thr	Lys	Gln	Asn	Xaa
			100					105					110		
Phe	Pro	Val	Gly	Ser	Val	Val	Glu	Tyr	Glu	Cys	Arg	Pro	Gly	Tyr	Gln
		115					120					125			
Arg	Asp	His	Leu	Leu	Ser	Gly	Lys	Leu	Thr	Cys	Leu	Leu	Asn	Phe	Thr
	130					135					140				
Trp	Ser	Lys	Pro	Asp	Glu	Phe	Cys	Lys	Arg	Lys	Ser	Cys	Pro	Asn	Pro
145					150					155					160
Gly	Asp	Leu	Arg	His	Gly	His	Val	Asn	Ile	Pro	Thr	Asp	Ile	Leu	Tyr
				165					170					175	
Ala	Ala	Val	Ile	His	Phe	Ser	Cys	Asn	Lys	Gly	Tyr	Arg	Leu	Val	Gly
			180						185				190		
Ala	Ala	Ser	Ser	Tyr	Cys	Ser	Ile	Val	Asn	Asp	Asp	Val	Gly	Trp	Ser
		195					200					205			
Asp	Pro	Leu	Pro	Glu	Cys	Gln	Glu	Ile	Phe	Cys	Pro	Glu	Pro	Pro	Lys
	210					215					220				
Ile	Ser	Asn	Gly	Val	Ile	Leu	Asp	Gln	Gln	Asn	Thr	Tyr	Val	Tyr	Gln
225					230					235					240



Gln Ala Val Lys Tyr Glu Cys Ile Lys Gly Phe Thr Leu Ile Gly Glu  
                   245                                  250                                  255

Asn Ser Asp Leu Leu Tyr Cys  
                   260

<210> 2214

<211> 55

<212> PRT

<213> Homo sapiens

<400> 2214

Met Cys Leu Leu Gly Gly Leu Ser Ala Pro Pro Leu Leu Leu Leu Pro  
       1                                  5                                  10                                  15

Leu Leu Pro Leu Leu Leu Cys Pro Pro Thr Gly Arg Val Thr Ala Ala  
                   20                                  25                                  30

Phe Pro Gln Ser Tyr Leu Met Pro Tyr Lys Val Trp Val Thr Asn Arg  
                   35                                  40                                  45

Val Phe Leu Lys Asn Ser Gln  
           50                                  55

<210> 2215

<211> 350

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (3)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (4)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2215

Met Ala Xaa Xaa Val Val Leu Leu Ala Leu Val Ala Gly Val Leu Gly  
       1                                  5                                  10                                  15

Asn Glu Phe Ser Ile Leu Lys Ser Pro Gly Ser Val Val Phe Arg Asn  
                   20                                  25                                  30

Gly Asn Trp Pro Ile Pro Gly Glu Arg Ile Pro Asp Val Ala Ala Leu  
                   35                                  40                                  45

Ser Met Gly Phe Ser Val Lys Glu Asp Leu Ser Trp Pro Gly Leu Ala  
           50                                  55                                  60

Val Gly Asn Leu Phe His Arg Pro Arg Ala Thr Val Met Val Met Val  
       65                                  70                                  75                                  80

Lys Gly Val Asn Lys Leu Ala Leu Pro Pro Gly Ser Val Ile Ser Tyr  
                     85                    90                    95  
 Pro Leu Glu Asn Ala Val Pro Phe Ser Leu Asp Ser Val Ala Asn Ser  
                     100                    105                    110  
 Ile His Ser Leu Phe Ser Glu Glu Thr Pro Val Val Leu Gln Leu Ala  
                     115                    120                    125  
 Pro Ser Glu Glu Arg Val Tyr Met Val Gly Lys Ala Asn Ser Val Phe  
                     130                    135                    140  
 Glu Asp Leu Ser Val Thr Leu Arg Gln Leu Arg Asn Arg Leu Phe Gln  
                     145                    150                    155                    160  
 Glu Asn Ser Val Leu Ser Ser Leu Pro Leu Asn Ser Leu Ser Arg Asn  
                     165                    170                    175  
 Asn Glu Val Asp Leu Leu Phe Leu Ser Glu Leu Gln Val Leu His Asp  
                     180                    185                    190  
 Ile Ser Ser Leu Leu Ser Arg His Lys His Leu Ala Lys Asp His Ser  
                     195                    200                    205  
 Pro Asp Leu Tyr Ser Leu Glu Leu Ala Gly Leu Asp Glu Ile Gly Lys  
                     210                    215                    220  
 Arg Tyr Gly Glu Asp Ser Glu Gln Phe Arg Asp Ala Ser Lys Ile Leu  
                     225                    230                    235                    240  
 Val Asp Ala Leu Gln Lys Phe Ala Asp Asp Met Tyr Ser Leu Tyr Gly  
                     245                    250                    255  
 Gly Asn Ala Val Val Glu Leu Val Thr Val Lys Ser Phe Asp Thr Ser  
                     260                    265                    270  
 Leu Ile Arg Lys Thr Arg Thr Ile Leu Glu Ala Lys Gln Ala Lys Asn  
                     275                    280                    285  
 Pro Ala Ser Pro Tyr Asn Leu Ala Tyr Lys Tyr Asn Phe Glu Tyr Ser  
                     290                    295                    300  
 Val Val Phe Asn Met Val Leu Trp Ile Met Ile Ala Leu Ala Leu Ala  
                     305                    310                    315                    320  
 Val Ile Ile Thr Ser Tyr Asn Ile Trp Asn Met Asp Pro Gly Tyr Asp  
                     325                    330                    335  
 Ser Ile Ile Tyr Arg Met Thr Asn Gln Lys Ile Arg Met Asp  
                     340                    345                    350

&lt;210&gt; 2216

&lt;211&gt; 350

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2216

Met Ala Val Phe Val Val Leu Leu Ala Leu Val Ala Gly Val Leu Gly

1	5	10	15
Asn Glu Phe Ser Ile Leu Lys Ser Pro Gly Ser Val Val Phe Arg Asn	20	25	30
Gly Asn Trp Pro Ile Pro Gly Glu Arg Ile Pro Asp Val Ala Ala Leu	35	40	45
Ser Met Gly Phe Ser Val Lys Glu Asp Leu Ser Trp Pro Gly Leu Ala	50	55	60
Val Gly Asn Leu Phe His Arg Pro Arg Ala Thr Val Met Val Met Val	65	70	75
Lys Gly Val Asn Lys Leu Ala Leu Pro Pro Gly Ser Val Ile Ser Tyr	85	90	95
Pro Leu Glu Asn Ala Val Pro Phe Ser Leu Asp Ser Val Ala Asn Ser	100	105	110
Ile His Ser Leu Phe Ser Glu Glu Thr Pro Val Val Leu Gln Leu Ala	115	120	125
Pro Ser Glu Glu Arg Val Tyr Met Val Gly Lys Ala Asn Ser Val Phe	130	135	140
Glu Asp Leu Ser Val Thr Leu Arg Gln Leu Arg Asn Arg Leu Phe Gln	145	150	155
Glu Asn Ser Val Leu Ser Ser Leu Pro Leu Asn Ser Leu Ser Arg Asn	165	170	175
Asn Glu Val Asp Leu Leu Phe Leu Ser Glu Leu Gln Val Leu His Asp	180	185	190
Ile Ser Ser Leu Leu Ser Arg His Lys His Leu Ala Lys Asp His Ser	195	200	205
Pro Asp Leu Tyr Ser Leu Glu Leu Ala Gly Leu Asp Glu Ile Gly Lys	210	215	220
Arg Tyr Gly Glu Asp Ser Glu Gln Phe Arg Asp Ala Ser Lys Ile Leu	225	230	235
Val Asp Ala Leu Gln Lys Phe Ala Asp Asp Met Tyr Ser Leu Tyr Gly	245	250	255
Gly Asn Ala Val Val Glu Leu Val Thr Val Lys Ser Phe Asp Thr Ser	260	265	270
Leu Ile Arg Lys Thr Arg Thr Ile Leu Glu Ala Lys Gln Ala Lys Asn	275	280	285
Pro Ala Ser Pro Tyr Asn Leu Ala Tyr Lys Tyr Asn Phe Glu Tyr Ser	290	295	300
Val Val Phe Asn Met Val Leu Trp Ile Met Ile Ala Leu Ala Leu Ala	305	310	315
Val Ile Ile Thr Ser Tyr Asn Ile Trp Asn Met Asp Pro Gly Tyr Asp			

325

330

335

Ser Ile Ile Tyr Arg Met Thr Asn Gln Lys Ile Arg Met Asp  
 340 345 350

&lt;210&gt; 2217

&lt;211&gt; 167

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (61)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (79)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2217

Met Cys Ser Leu Phe His Ala Phe Ile Phe Ala Gln Leu Trp Thr Val  
 1 5 10 15

Tyr Cys Glu Gln Ser Ala Val Ala Thr Asn Leu Gln Asn Gln Asn Glu  
 20 25 30

Phe Ser Phe Thr Ala Ile Leu Thr Ala Leu Glu Phe Trp Ser Arg Val  
 35 40 45

Thr Pro Ser Ile Leu Gln Leu Met Ala His Asn Lys Xaa Met Val Glu  
 50 55 60

Met Val Cys Leu His Val Ile Ser Leu Met Glu Ala Leu Gln Xaa Cys  
 65 70 75 80

Asn Ser Thr Ile Phe Val Lys Leu Ile Pro Met Trp Leu Pro Met Ile  
 85 90 95

Gln Ser Asn Ile Lys His Leu Ser Ala Gly Leu Gln Leu Arg Leu Gln  
 100 105 110

Ala Ile Gln Asn His Val Asn His His Ser Leu Arg Thr Leu Pro Gly  
 115 120 125

Ser Gly Gln Ser Ser Ala Gly Leu Ala Ala Leu Arg Lys Trp Leu Gln  
 130 135 140

Cys Thr Gln Phe Lys Met Ala Gln Val Glu Ile Gln Ser Ser Glu Ala  
 145 150 155 160

Ala Ser Gln Phe Tyr Pro Leu  
 165

&lt;210&gt; 2218

&lt;211&gt; 110

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2218

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Met Glu Phe Pro Gly Ala Asp Gly Cys Asn Gln Val Asp Ala Glu Tyr
 1             5             10             15

Leu Lys Val Gly Ser Glu Gly His Phe Arg Val Pro Ala Leu Gly Tyr
             20             25             30

Leu Asp Val Arg Ile Val Asp Thr Asp Tyr Ser Ser Phe Ala Val Leu
             35             40             45

Tyr Ile Tyr Lys Glu Leu Glu Gly Ala Leu Ser Thr Met Val Gln Leu
 50             55             60

Tyr Ser Arg Thr Gln Asp Val Ser Pro Gln Ala Leu Lys Ala Phe Gln
 65             70             75             80

Asp Phe Tyr Pro Thr Leu Gly Leu Pro Glu Asp Met Met Val Met Leu
             85             90             95

Pro Gln Ser Asp Ala Cys Asn Pro Glu Ser Lys Glu Ala Pro
             100             105             110

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&lt;210&gt; 2219

&lt;211&gt; 115

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (101)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;220&gt;

&lt;221&gt; SITE

&lt;222&gt; (106)

&lt;223&gt; Xaa equals any of the naturally occurring L-amino acids

&lt;400&gt; 2219

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Ile Ser Leu Leu Trp Asn Leu Trp Gln Ser Val Lys Ile Gly Cys Gly
 1             5             10             15

Glu Lys Leu Tyr Pro Gly His Thr Lys Asp Ser Arg Asn His Leu Gly
             20             25             30

Gln Asn Leu Ser Phe Leu His Phe Ile Tyr Leu Phe Pro Pro Pro His
             35             40             45

Ser Thr His Thr Leu Pro Thr Ser Ser Thr Ser Thr Phe Lys His Lys
             50             55             60

Asp Val Arg Val Phe Ser Leu Ser Val Ser Trp Arg Thr Gly Cys Trp
             65             70             75             80

Glu Arg Lys Gly Gln Met Ser Lys Gly Gly Cys Arg Ala Gly Gln Ala
             85             90             95

```

Asp Ser Gly Gly Xaa Leu Glu Glu Leu Xaa Pro Ser Gln Thr Trp Val  
 100 105 110

Ser Lys Thr  
 115

<210> 2220

<211> 262

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (254)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2220

Met Glu Cys Cys Arg Arg Ala Thr Pro Gly Thr Leu Leu Leu Phe Leu  
 1 5 10 15

Ala Phe Leu Leu Leu Ser Ser Arg Thr Ala Arg Ser Glu Glu Asp Arg  
 20 25 30

Asp Gly Leu Trp Asp Ala Trp Gly Pro Trp Ser Glu Cys Ser Arg Thr  
 35 40 45

Cys Gly Gly Gly Ala Ser Tyr Ser Leu Arg Arg Cys Leu Ser Ser Lys  
 50 55 60

Ser Cys Glu Gly Arg Asn Ile Arg Tyr Arg Thr Cys Ser Asn Val Asp  
 65 70 75 80

Cys Pro Pro Glu Ala Gly Asp Phe Arg Ala Gln Gln Cys Ser Ala His  
 85 90 95

Asn Asp Val Lys His His Gly Gln Phe Tyr Glu Trp Leu Pro Val Ser  
 100 105 110

Asn Asp Pro Asp Asn Pro Cys Ser Leu Lys Cys Gln Ala Lys Gly Thr  
 115 120 125

Thr Leu Val Val Glu Leu Ala Pro Lys Val Leu Asp Gly Thr Arg Cys  
 130 135 140

Tyr Thr Glu Ser Leu Asp Met Cys Ile Ser Gly Leu Cys Gln Ile Val  
 145 150 155 160

Gly Cys Asp His Gln Leu Gly Ser Thr Val Lys Glu Asp Asn Cys Gly  
 165 170 175

Val Cys Asn Gly Asp Gly Ser Thr Cys Arg Leu Val Arg Gly Gln Tyr  
 180 185 190

Lys Ser Gln Leu Ser Ala Thr Lys Ser Asp Asp Thr Val Val Ala Ile  
 195 200 205

Pro Tyr Gly Ser Arg His Ile Arg Leu Val Leu Lys Gly Pro Asp His

210                                      215                                      220  
 Leu Tyr Leu Glu Thr Lys Thr Leu Gln Gly Thr Lys Gly Glu Asn Ser  
 225                                      230                                      235                                      240  
 Leu Ser Ser Thr Gly Thr Phe Leu Val Asp Asn Ser Ser Xaa Thr Ser  
                                     245                                      250                                      255  
 Arg Asn Phe Gln Thr Lys  
                                     260  
  
 <210> 2221  
 <211> 514  
 <212> PRT  
 <213> Homo sapiens  
  
 <400> 2221  
 Glu Leu Cys Arg Gln Pro Lys Pro Ser Thr Val Gln Ala Cys Asn Arg  
   1                                      5                                      10                                      15  
 Phe Asn Cys Pro Pro Ala Trp Tyr Pro Ala Gln Trp Gln Pro Cys Ser  
                                     20                                      25                                      30  
 Arg Thr Cys Gly Gly Gly Val Gln Lys Arg Glu Val Leu Cys Lys Gln  
                                     35                                      40                                      45  
 Arg Met Ala Asp Gly Ser Phe Leu Glu Leu Pro Glu Thr Phe Cys Ser  
   50                                      55                                      60  
 Ala Ser Lys Pro Ala Cys Gln Gln Ala Cys Lys Lys Asp Asp Cys Pro  
   65                                      70                                      75                                      80  
 Ser Glu Trp Leu Leu Ser Asp Trp Thr Glu Cys Ser Thr Ser Cys Gly  
                                     85                                      90                                      95  
 Glu Gly Thr Gln Thr Arg Ser Ala Ile Cys Arg Lys Met Leu Lys Thr  
                                     100                                      105                                      110  
 Gly Leu Ser Thr Val Val Asn Ser Thr Leu Cys Pro Pro Leu Pro Phe  
                                     115                                      120                                      125  
 Ser Ser Ser Ile Arg Pro Cys Met Leu Ala Thr Cys Ala Arg Pro Gly  
   130                                      135                                      140  
 Arg Pro Ser Thr Lys His Ser Pro His Ile Ala Ala Ala Arg Lys Val  
 145                                      150                                      155                                      160  
 Tyr Ile Gln Thr Arg Arg Gln Arg Lys Leu His Phe Val Val Gly Gly  
                                     165                                      170                                      175  
 Phe Ala Tyr Leu Leu Pro Lys Thr Ala Val Val Leu Arg Cys Pro Ala  
                                     180                                      185                                      190  
 Arg Arg Val Arg Lys Pro Leu Ile Thr Trp Glu Lys Asp Gly Gln His  
   195                                      200                                      205  
 Leu Ile Ser Ser Thr His Val Thr Val Ala Pro Phe Gly Tyr Leu Lys  
   210                                      215                                      220

Ile His Arg Leu Lys Pro Ser Asp Ala Gly Val Tyr Thr Cys Ser Ala  
 225 230 235 240  
 Gly Pro Ala Arg Glu His Phe Val Ile Lys Leu Ile Gly Gly Asn Arg  
 245 250 255  
 Lys Leu Val Ala Arg Pro Leu Ser Pro Arg Ser Glu Glu Glu Val Leu  
 260 265 270  
 Ala Gly Arg Lys Gly Gly Pro Lys Glu Ala Leu Gln Thr His Lys His  
 275 280 285  
 Gln Asn Gly Ile Phe Ser Asn Gly Ser Lys Ala Glu Lys Arg Gly Leu  
 290 295 300  
 Ala Ala Asn Pro Gly Ser Arg Tyr Asp Asp Leu Val Ser Arg Leu Leu  
 305 310 315 320  
 Glu Gln Gly Gly Trp Pro Gly Glu Leu Leu Ala Ser Trp Glu Ala Gln  
 325 330 335  
 Asp Ser Ala Glu Arg Asn Thr Thr Ser Glu Glu Asp Pro Gly Ala Glu  
 340 345 350  
 Gln Val Leu Leu His Leu Pro Phe Thr Met Val Thr Glu Gln Arg Arg  
 355 360 365  
 Leu Asp Asp Ile Leu Gly Asn Leu Ser Gln Gln Pro Glu Glu Leu Arg  
 370 375 380  
 Asp Leu Tyr Ser Lys His Leu Val Ala Gln Leu Ala Gln Glu Ile Phe  
 385 390 395 400  
 Arg Ser His Leu Glu His Gln Asp Thr Leu Leu Lys Pro Ser Glu Arg  
 405 410 415  
 Arg Thr Ser Pro Val Thr Leu Ser Pro His Lys His Val Ser Gly Phe  
 420 425 430  
 Ser Ser Ser Leu Arg Thr Ser Ser Thr Gly Asp Ala Gly Gly Gly Ser  
 435 440 445  
 Arg Arg Pro His Arg Lys Pro Thr Ile Leu Arg Lys Ile Ser Ala Ala  
 450 455 460  
 Gln Gln Leu Ser Ala Ser Glu Val Val Thr His Leu Gly Gln Thr Val  
 465 470 475 480  
 Ala Leu Ala Ser Gly Thr Leu Ser Val Phe Cys Thr Val Arg Pro Ser  
 485 490 495  
 Ala Thr Gln Gly Leu Pro Ser Ala Gly Pro Gly Met Glu Lys Lys Ser  
 500 505 510  
 Val Gln



&lt;210&gt; 2222

&lt;211&gt; 1745

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2222

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Met Glu Cys Cys Arg Arg Ala Thr Pro Gly Thr Leu Leu Leu Phe Leu
 1              5              10              15

Ala Phe Leu Leu Leu Ser Ser Arg Thr Ala Arg Ser Glu Glu Asp Arg
      20              25              30

Asp Gly Leu Trp Asp Ala Trp Gly Pro Trp Ser Glu Cys Ser Arg Thr
      35              40              45

Cys Gly Gly Gly Ala Ser Tyr Ser Leu Arg Arg Cys Leu Ser Ser Lys
      50              55              60

Ser Cys Glu Gly Arg Asn Ile Arg Tyr Arg Thr Cys Ser Asn Val Asp
      65              70              75              80

Cys Pro Pro Glu Ala Gly Asp Phe Arg Ala Gln Gln Cys Ser Ala His
      85              90              95

Asn Asp Val Lys His His Gly Gln Phe Tyr Glu Trp Leu Pro Val Ser
      100              105              110

Asn Asp Pro Asp Asn Pro Cys Ser Leu Lys Cys Gln Ala Lys Gly Thr
      115              120              125

Thr Leu Val Val Glu Leu Ala Pro Lys Val Leu Asp Gly Thr Arg Cys
      130              135              140

Tyr Thr Glu Ser Leu Asp Met Cys Ile Ser Gly Leu Cys Gln Ile Val
      145              150              155              160

Gly Cys Asp His Gln Leu Gly Ser Thr Val Lys Glu Asp Asn Cys Gly
      165              170              175

Val Cys Asn Gly Asp Gly Ser Thr Cys Arg Leu Val Arg Gly Gln Tyr
      180              185              190

Lys Ser Gln Leu Ser Ala Thr Lys Ser Asp Asp Thr Val Val Ala Ile
      195              200              205

Pro Tyr Gly Ser Arg His Ile Arg Leu Val Leu Lys Gly Pro Asp His
      210              215              220

Leu Tyr Leu Glu Thr Lys Thr Leu Gln Gly Thr Lys Gly Glu Asn Ser
      225              230              235              240

Leu Ser Ser Thr Gly Thr Phe Leu Val Asp Asn Ser Ser Val Asp Phe
      245              250              255

Gln Lys Phe Pro Asp Lys Glu Ile Leu Arg Met Ala Gly Pro Leu Thr
      260              265              270

Ala Asp Phe Ile Val Lys Ile Arg Asn Ser Gly Ser Ala Asp Ser Thr
      275              280              285

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Val Gln Phe Ile Phe Tyr Gln Pro Ile Ile His Arg Trp Arg Glu Thr  
 290 295 300  
 Asp Phe Phe Pro Cys Ser Ala Thr Cys Gly Gly Gly Tyr Gln Leu Thr  
 305 310 315 320  
 Ser Ala Glu Cys Tyr Asp Leu Arg Ser Asn Arg Val Val Ala Asp Gln  
 325 330 335  
 Tyr Cys His Tyr Tyr Pro Glu Asn Ile Lys Pro Lys Pro Lys Leu Gln  
 340 345 350  
 Glu Cys Asn Leu Asp Pro Cys Pro Ala Arg Trp Glu Ala Thr Pro Trp  
 355 360 365  
 Thr Ala Cys Ser Ser Ser Cys Gly Gly Gly Ile Gln Ser Arg Ala Val  
 370 375 380  
 Ser Cys Val Glu Glu Asp Ile Gln Gly His Val Thr Ser Val Glu Glu  
 385 390 395 400  
 Trp Lys Cys Met Tyr Thr Pro Lys Met Pro Ile Ala Gln Pro Cys Asn  
 405 410 415  
 Ile Phe Asp Cys Pro Lys Trp Leu Ala Gln Glu Trp Ser Pro Cys Thr  
 420 425 430  
 Val Thr Cys Gly Gln Gly Leu Arg Tyr Arg Val Val Leu Cys Ile Asp  
 435 440 445  
 His Arg Gly Met His Thr Gly Gly Cys Ser Pro Lys Thr Lys Pro His  
 450 455 460  
 Ile Lys Glu Glu Cys Ile Val Pro Thr Pro Cys Tyr Lys Pro Lys Glu  
 465 470 475 480  
 Lys Leu Pro Val Glu Ala Lys Leu Pro Trp Phe Lys Gln Ala Gln Glu  
 485 490 495  
 Leu Glu Glu Gly Ala Ala Val Ser Glu Glu Pro Ser Phe Ile Pro Lys  
 500 505 510  
 Ala Trp Ser Ala Cys Thr Val Thr Cys Gly Val Gly Thr Gln Val Arg  
 515 520 525  
 Ile Val Arg Cys Gln Val Leu Leu Ser Phe Ser Gln Ser Val Ala Asp  
 530 535 540  
 Leu Pro Ile Asp Glu Cys Glu Gly Pro Lys Pro Ala Ser Gln Arg Ala  
 545 550 555 560  
 Cys Tyr Ala Gly Pro Cys Ser Gly Glu Ile Pro Glu Phe Asn Pro Asp  
 565 570 575  
 Glu Thr Asp Gly Leu Phe Gly Gly Leu Gln Asp Phe Asp Glu Leu Tyr  
 580 585 590  
 Asp Trp Glu Tyr Glu Gly Phe Thr Lys Cys Ser Glu Ser Cys Gly Gly  
 595 600 605

Gly Val Gln Glu Ala Val Val Ser Cys Leu Asn Lys Gln Thr Arg Glu  
 610 615 620  
 Pro Ala Glu Glu Asn Leu Cys Val Thr Ser Arg Arg Pro Pro Gln Leu  
 625 630 635 640  
 Leu Lys Ser Cys Asn Leu Asp Pro Cys Pro Ala Arg Trp Glu Ile Gly  
 645 650 655  
 Lys Trp Ser Pro Cys Ser Leu Thr Cys Gly Val Gly Leu Gln Thr Arg  
 660 665 670  
 Asp Val Phe Cys Ser His Leu Leu Ser Arg Glu Met Asn Glu Thr Val  
 675 680 685  
 Ile Leu Ala Asp Glu Leu Cys Arg Gln Pro Lys Pro Ser Thr Val Gln  
 690 695 700  
 Ala Cys Asn Arg Phe Asn Cys Pro Pro Ala Trp Tyr Pro Ala Gln Trp  
 705 710 715 720  
 Gln Pro Cys Ser Arg Thr Cys Gly Gly Gly Val Gln Lys Arg Glu Val  
 725 730 735  
 Leu Cys Lys Gln Arg Met Ala Asp Gly Ser Phe Leu Glu Leu Pro Glu  
 740 745 750  
 Thr Phe Cys Ser Ala Ser Lys Pro Ala Cys Gln Gln Ala Cys Lys Lys  
 755 760 765  
 Asp Asp Cys Pro Ser Glu Trp Leu Leu Ser Asp Trp Thr Glu Cys Ser  
 770 775 780  
 Thr Ser Cys Gly Glu Gly Thr Gln Thr Arg Ser Ala Ile Cys Arg Lys  
 785 790 795 800  
 Met Leu Lys Thr Gly Leu Ser Thr Val Val Asn Ser Thr Leu Cys Pro  
 805 810 815  
 Pro Leu Pro Phe Ser Ser Ser Ile Arg Pro Cys Met Leu Ala Thr Cys  
 820 825 830  
 Ala Arg Pro Gly Arg Pro Ser Thr Lys His Ser Pro His Ile Ala Ala  
 835 840 845  
 Ala Arg Lys Val Tyr Ile Gln Thr Arg Arg Gln Arg Lys Leu His Phe  
 850 855 860  
 Val Val Gly Gly Phe Ala Tyr Leu Leu Pro Lys Thr Ala Val Val Leu  
 865 870 875 880  
 Arg Cys Pro Ala Arg Arg Val Arg Lys Pro Leu Ile Thr Trp Glu Lys  
 885 890 895  
 Asp Gly Gln His Leu Ile Ser Ser Thr His Val Thr Val Ala Pro Phe  
 900 905 910  
 Gly Tyr Leu Lys Ile His Arg Leu Lys Pro Ser Asp Ala Gly Val Tyr  
 915 920 925

Thr Cys Ser Ala Gly Pro Ala Arg Glu His Phe Val Ile Lys Leu Ile  
 930 935 940  
 Gly Gly Asn Arg Lys Leu Val Ala Arg Pro Leu Ser Pro Arg Ser Glu  
 945 950 955 960  
 Glu Glu Val Leu Ala Gly Arg Lys Gly Gly Pro Lys Glu Ala Leu Gln  
 965 970 975  
 Thr His Lys His Gln Asn Gly Ile Phe Ser Asn Gly Ser Lys Ala Glu  
 980 985 990  
 Lys Arg Gly Leu Ala Ala Asn Pro Gly Ser Arg Tyr Asp Asp Leu Val  
 995 1000 1005  
 Ser Arg Leu Leu Glu Gln Gly Gly Trp Pro Gly Glu Leu Leu Ala Ser  
 1010 1015 1020  
 Trp Glu Ala Gln Asp Ser Ala Glu Arg Asn Thr Thr Ser Glu Glu Asp  
 1025 1030 1035 1040  
 Pro Gly Ala Glu Gln Val Leu Leu His Leu Pro Phe Thr Met Val Thr  
 1045 1050 1055  
 Glu Gln Arg Arg Leu Asp Asp Ile Leu Gly Asn Leu Ser Gln Gln Pro  
 1060 1065 1070  
 Glu Glu Leu Arg Asp Leu Tyr Ser Lys His Leu Val Ala Gln Leu Ala  
 1075 1080 1085  
 Gln Glu Ile Phe Arg Ser His Leu Glu His Gln Asp Thr Leu Leu Lys  
 1090 1095 1100  
 Pro Ser Glu Arg Arg Thr Ser Pro Val Thr Leu Ser Pro His Lys His  
 1105 1110 1115 1120  
 Val Ser Gly Phe Ser Ser Ser Leu Arg Thr Ser Ser Thr Gly Asp Ala  
 1125 1130 1135  
 Gly Gly Gly Ser Arg Arg Pro His Arg Lys Pro Thr Ile Leu Arg Lys  
 1140 1145 1150  
 Ile Ser Ala Ala Gln Gln Leu Ser Ala Ser Glu Val Val Thr His Leu  
 1155 1160 1165  
 Gly Gln Thr Val Ala Leu Ala Ser Gly Thr Leu Ser Val Leu Leu His  
 1170 1175 1180  
 Cys Glu Ala Ile Gly His Pro Arg Pro Thr Ile Ser Trp Ala Arg Asn  
 1185 1190 1195 1200  
 Gly Glu Glu Val Gln Phe Ser Asp Arg Ile Leu Leu Gln Pro Asp Asp  
 1205 1210 1215  
 Ser Leu Gln Ile Leu Ala Pro Val Glu Ala Asp Val Gly Phe Tyr Thr  
 1220 1225 1230  
 Cys Asn Ala Thr Asn Ala Leu Gly Tyr Asp Ser Val Ser Ile Ala Val  
 1235 1240 1245

Thr Leu Ala Gly Lys Pro Leu Val Lys Thr Ser Arg Met Thr Val Ile  
 1250 1255 1260  
 Asn Thr Glu Lys Pro Ala Val Thr Val Asp Ile Gly Ser Thr Ile Lys  
 1265 1270 1275 1280  
 Thr Val Gln Gly Val Asn Val Thr Ile Asn Cys Gln Val Ala Gly Val  
 1285 1290 1295  
 Pro Glu Ala Glu Val Thr Trp Phe Arg Asn Lys Ser Lys Leu Gly Ser  
 1300 1305 1310  
 Pro His His Leu His Glu Gly Ser Leu Leu Leu Thr Asn Val Ser Ser  
 1315 1320 1325  
 Ser Asp Gln Gly Leu Tyr Ser Cys Arg Ala Ala Asn Leu His Gly Glu  
 1330 1335 1340  
 Leu Thr Glu Ser Thr Gln Leu Leu Ile Leu Asp Pro Pro Gln Val Pro  
 1345 1350 1355 1360  
 Thr Gln Leu Glu Asp Ile Arg Ala Leu Leu Ala Ala Thr Gly Pro Asn  
 1365 1370 1375  
 Leu Pro Ser Val Leu Thr Ser Pro Leu Gly Thr Gln Leu Val Leu Asp  
 1380 1385 1390  
 Pro Gly Asn Ser Ala Leu Leu Gly Cys Pro Ile Lys Gly His Pro Val  
 1395 1400 1405  
 Pro Asn Ile Thr Trp Phe His Gly Gly Gln Pro Ile Val Thr Ala Thr  
 1410 1415 1420  
 Gly Leu Thr His His Ile Leu Ala Ala Gly Gln Ile Leu Gln Val Ala  
 1425 1430 1435 1440  
 Asn Leu Ser Gly Gly Ser Gln Gly Glu Phe Ser Cys Leu Ala Gln Asn  
 1445 1450 1455  
 Glu Ala Gly Val Leu Met Gln Lys Ala Ser Leu Val Ile Gln Asp Tyr  
 1460 1465 1470  
 Trp Trp Ser Val Asp Arg Leu Ala Thr Cys Ser Ala Ser Cys Gly Asn  
 1475 1480 1485  
 Arg Gly Val Gln Gln Pro Arg Leu Arg Cys Leu Leu Asn Ser Thr Glu  
 1490 1495 1500  
 Val Asn Pro Ala His Cys Ala Gly Lys Val Arg Pro Ala Val Gln Pro  
 1505 1510 1515 1520  
 Ile Ala Cys Asn Arg Arg Asp Cys Pro Ser Arg Trp Met Val Thr Ser  
 1525 1530 1535  
 Trp Ser Ala Cys Thr Arg Ser Cys Gly Gly Gly Val Gln Thr Arg Arg  
 1540 1545 1550  
 Val Thr Cys Gln Lys Leu Lys Ala Ser Gly Ile Ser Thr Pro Val Ser  
 1555 1560 1565

Asn Asp Met Cys Thr Gln Val Ala Lys Arg Pro Val Asp Thr Gln Ala  
 1570 1575 1580  
 Cys Asn Gln Gln Leu Cys Val Glu Trp Ala Phe Ser Ser Trp Gly Gln  
 1585 1590 1595 1600  
 Cys Asn Gly Pro Cys Ile Gly Pro His Leu Ala Val Gln His Arg Gln  
 1605 1610 1615  
 Val Phe Cys Gln Thr Arg Asp Gly Ile Thr Leu Pro Ser Glu Gln Cys  
 1620 1625 1630  
 Ser Ala Leu Pro Arg Pro Val Ser Thr Gln Asn Cys Trp Ser Glu Ala  
 1635 1640 1645  
 Cys Ser Val His Trp Arg Val Ser Leu Trp Thr Leu Cys Thr Ala Thr  
 1650 1655 1660  
 Cys Gly Asn Tyr Gly Phe Gln Ser Arg Arg Val Glu Cys Val His Ala  
 1665 1670 1675 1680  
 Arg Thr Asn Lys Ala Val Pro Glu His Leu Cys Ser Trp Gly Pro Arg  
 1685 1690 1695  
 Pro Ala Asn Trp Gln Arg Cys Asn Ile Thr Pro Cys Glu Asn Met Glu  
 1700 1705 1710  
 Cys Arg Asp Thr Thr Arg Tyr Cys Glu Lys Val Lys Gln Leu Lys Leu  
 1715 1720 1725  
 Cys Gln Leu Ser Gln Phe Lys Ser Arg Cys Cys Gly Thr Cys Gly Lys  
 1730 1735 1740  
 Ala  
 1745

<210> 2223  
 <211> 19  
 <212> PRT  
 <213> Homo sapiens

<400> 2223  
 Glu Cys Cys Glu Thr Ala Ala Pro Pro Gly Pro His Arg Arg Pro Glu  
 1 5 10 15  
 Ser Gly Gln

<210> 2224  
 <211> 363  
 <212> PRT  
 <213> Homo sapiens

<400> 2224  
 Met Ala Ala Val Leu Thr Trp Ala Leu Ala Leu Leu Ser Ala Phe Ser  
 1 5 10 15

Ala Thr Gln Ala Arg Lys Gly Phe Trp Asp Tyr Phe Ser Gln Thr Ser  
                   20                                  25                                  30  
 Gly Asp Lys Gly Arg Val Glu Gln Ile His Gln Gln Lys Met Ala Arg  
                   35                                  40                                  45  
 Glu Pro Ala Thr Leu Lys Asp Ser Leu Glu Gln Asp Leu Asn Asn Met  
                   50                                  55                                  60  
 Asn Lys Phe Leu Glu Lys Leu Arg Pro Leu Ser Gly Ser Glu Ala Pro  
                   65                                  70                                  75                                  80  
 Arg Leu Pro Gln Asp Pro Val Gly Met Arg Arg Gln Leu Gln Glu Glu  
                                   85                                  90                                  95  
 Leu Glu Glu Val Lys Ala Arg Leu Gln Pro Tyr Met Ala Glu Ala His  
                   100                                  105                                  110  
 Glu Leu Val Gly Trp Asn Leu Glu Gly Leu Arg Gln Gln Leu Lys Pro  
                   115                                  120                                  125  
 Tyr Thr Met Asp Leu Met Glu Gln Val Ala Leu Arg Val Gln Glu Leu  
                   130                                  135                                  140  
 Gln Glu Gln Leu Arg Val Val Gly Glu Asp Thr Lys Ala Gln Leu Leu  
                   145                                  150                                  155                                  160  
 Gly Gly Val Asp Glu Ala Trp Ala Leu Leu Gln Gly Leu Gln Ser Arg  
                                   165                                  170                                  175  
 Val Val His His Thr Gly Arg Phe Lys Glu Leu Phe His Pro Tyr Ala  
                                   180                                  185                                  190  
 Glu Ser Leu Val Ser Gly Ile Gly Arg His Val Gln Glu Leu His Arg  
                   195                                  200                                  205  
 Ser Val Ala Pro His Ala Pro Ala Ser Pro Ala Arg Leu Ser Arg Cys  
                   210                                  215                                  220  
 Val Gln Val Leu Ser Arg Lys Leu Thr Leu Lys Ala Lys Ala Leu His  
                   225                                  230                                  235                                  240  
 Ala Arg Ile Gln Gln Asn Leu Asp Gln Leu Arg Glu Glu Leu Ile Arg  
                                   245                                  250                                  255  
 Ala Phe Ala Gly Thr Gly Thr Glu Glu Gly Ala Gly Pro Asp Pro Gln  
                   260                                  265                                  270  
 Met Leu Ser Glu Glu Val Arg Gln Arg Leu Gln Ala Phe Arg Gln Asp  
                   275                                  280                                  285  
 Thr Tyr Leu Gln Ile Ala Ala Phe Thr Arg Ala Ile Asp Gln Glu Thr  
                   290                                  295                                  300  
 Glu Glu Val Gln Gln Gln Leu Ala Pro Pro Pro Pro Gly His Ser Ala  
                   305                                  310                                  315                                  320  
 Phe Ala Pro Glu Phe Gln Gln Thr Asp Ser Gly Lys Val Leu Ser Lys  
                                   325                                  330                                  335

Leu Gln Ala Arg Leu Asp Asp Leu Trp Glu Asp Ile Thr His Ser Leu  
 340 345 350

His Asp Gln Gly His Ser His Leu Gly Asp Pro  
 355 360

<210> 2225

<211> 183

<212> PRT

<213> Homo sapiens

<220>

<221> SITE

<222> (86)

<223> Xaa equals any of the naturally occurring L-amino acids

<220>

<221> SITE

<222> (146)

<223> Xaa equals any of the naturally occurring L-amino acids

<400> 2225

Met Ala Val Gly Lys Phe Leu Leu Gly Ser Leu Leu Leu Leu Ser Leu  
 1 5 10 15

Gln Leu Gly Gln Gly Trp Gly Pro Asp Ala Arg Gly Val Pro Val Ala  
 20 25 30

Asp Gly Glu Phe Ser Ser Glu Gln Val Ala Lys Ala Gly Gly Thr Trp  
 35 40 45

Leu Gly Lys Asp Phe Gln Gly Pro Ser Val Thr Ser Gln Leu Ser Pro  
 50 55 60

Ala Leu Thr Leu Leu Thr Val Ser Ala Leu Pro Ser His Arg His Pro  
 65 70 75 80

Pro Pro Pro Cys Pro Xaa Ala Pro Ser Pro Val Trp Ser Met Pro Ala  
 85 90 95

Val Glu Pro Asp Pro Val Arg Gly Arg Ala Arg Pro Gly Leu Arg Leu  
 100 105 110

Ile Gly Glu Val Ile Phe Arg Tyr Cys Ala Gly Ser Cys Pro Arg Gly  
 115 120 125

Ala Arg Thr Gln His Gly Leu Ala Leu Ala Arg Leu Gln Gly Gln Gly  
 130 135 140

Arg Xaa His Gly Gly Pro Cys Cys Arg Pro Thr Arg Tyr Thr Asp Val  
 145 150 155 160

Ala Phe Leu Asp Asp Arg His Ala Gly Ser Gly Cys Pro Ser Ser Arg  
 165 170 175

Arg Leu Cys Gly Cys Gly Gly  
 180



<210> 2226  
 <211> 252  
 <212> PRT  
 <213> Homo sapiens

<220>  
 <221> SITE  
 <222> (86)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (116)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (135)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<220>  
 <221> SITE  
 <222> (146)  
 <223> Xaa equals any of the naturally occurring L-amino acids

<400> 2226  
 Met Ala Val Gly Lys Phe Leu Leu Gly Ser Leu Leu Leu Leu Ser Leu  
           1                  5                  10                  15

Gln Leu Gly Gln Gly Trp Gly Pro Asp Ala Arg Gly Val Pro Val Ala  
                   20                  25                  30

Asp Gly Glu Phe Ser Ser Glu Gln Val Ala Lys Ala Gly Gly Thr Trp  
           35                  40                  45

Leu Gly Lys Asp Phe Gln Gly Pro Ser Val Thr Ser Gln Leu Ser Pro  
           50                  55                  60

Ala Leu Thr Leu Leu Thr Val Ser Ala Leu Pro Ser His Arg His Pro  
           65                  70                  75                  80

Pro Pro Pro Cys Pro Xaa Ala Pro Ser Pro Val Trp Ser Met Pro Ala  
                   85                  90                  95

Val Glu Pro Asp Pro Val Arg Gly Arg Ala Arg Pro Gly Leu Arg Leu  
                   100                  105                  110

Ile Gly Glu Xaa His Leu Pro Leu Leu Arg Arg Gln Leu Pro Pro Trp  
           115                  120                  125

Cys Pro His Pro Ala Trp Xaa Gly Ala Gly Pro Ala Ala Gly Pro Gly  
           130                  135                  140

Pro Xaa Pro Arg Arg Ala Leu Leu Pro Ala His Ser Leu His Arg Arg  
           145                  150                  155                  160

Gly Leu Pro Arg Arg Pro Pro Arg Trp Gln Arg Leu Pro Gln Leu Ser

	165		170		175
Ala Ala Leu Arg Leu Trp Trp Leu Arg Val Pro Gly Leu Ala Pro Arg					
	180		185		190
Ser Cys Ser Ala Gly Gly Ala Arg Leu Thr Tyr Leu Leu Glu Thr Trp					
	195		200		205
Met Gln Arg Gln Arg Gly Gly Glu Trp Ala Gly Ala Thr Ser Ser Glu					
	210		215		220
Cys Asn Lys Gly His His Ser Pro Gly Lys Lys Lys Lys Lys Lys Lys					
225		230		235	240
Lys Lys Lys Lys Lys Leu Glu Gly Gly Ser Arg Tyr					
	245		250		

&lt;210&gt; 2227

&lt;211&gt; 150

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2227

Met Val Met Ile Leu Phe Val Ala Phe Ile Thr Cys Trp Glu Glu Val					
1		5		10	15
Thr Thr Leu Val Gln Ala Ile Arg Ile Thr Ser Tyr Met Asn Glu Thr					
	20		25		30
Ile Leu Tyr Phe Pro Phe Ser Ser His Ser Ser Tyr Thr Val Arg Ser					
	35		40		45
Lys Lys Ile Phe Leu Ser Lys Leu Ile Val Cys Phe Leu Ser Thr Trp					
	50		55		60
Leu Pro Phe Val Leu Leu Gln Val Ile Ile Val Leu Leu Lys Val Gln					
	65		70		75
Ile Pro Ala Tyr Ile Glu Met Asn Ile Pro Trp Leu Tyr Phe Val Asn					
	85		90		95
Ser Phe Leu Ile Ala Thr Val Tyr Trp Phe Asn Cys His Lys Leu Asn					
	100		105		110
Leu Lys Asp Ile Gly Leu Pro Leu Asp Pro Phe Val Asn Trp Lys Cys					
	115		120		125
Cys Phe Ile Pro Leu Thr Ile Pro Asn Leu Glu Gln Ile Glu Lys Pro					
	130		135		140
Ile Ser Ile Met Ile Cys					
145		150			

&lt;210&gt; 2228

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2228

Met Ile Pro Phe Pro Ala Cys Leu Leu Leu Ala Leu Phe Pro Lys Val  
 1 5 10 15

Gln Val Gly Arg Thr Thr Ser Ala Tyr Phe Ser Thr Ile Pro Ser Met  
 20 25 30

Pro Ala Arg Ser Gln Ile Asn Leu Pro Val Glu Ser Gly Ser Ala Leu  
 35 40 45

Leu Glu Pro Arg Gly Lys Gly Arg Val Glu Arg Val Cys Pro Val Ala  
 50 55 60

Trp Ser Ser Met Val Ala Ser Cys Leu Pro Ser Pro Ser Ser Gly Gly  
 65 70 75 80

Pro Glu Gly Ser Leu Gly Thr Val Pro Gln Ile Leu Thr Gln Gly Pro  
 85 90 95

Ala Trp Gly Arg Asp Gly Cys Arg Gln Asn Ala Leu Tyr Arg Asp Phe  
 100 105 110

Leu Leu Leu Gly Arg Cys Val Ser Pro Thr Ile Cys Leu  
 115 120 125

&lt;210&gt; 2229

&lt;211&gt; 766

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2229

Met Ile Trp Arg Ser Arg Ala Gly Ala Glu Leu Phe Ser Leu Met Ala  
 1 5 10 15

Leu Trp Glu Trp Ile Ala Leu Ser Leu His Cys Trp Val Leu Ala Val  
 20 25 30

Ala Ala Val Ser Asp Gln His Ala Thr Ser Pro Phe Asp Trp Leu Leu  
 35 40 45

Ser Asp Lys Gly Pro Phe His Arg Ser Gln Glu Tyr Thr Asp Phe Val  
 50 55 60

Asp Arg Ser Arg Gln Gly Phe Ser Thr Arg Tyr Lys Ile Tyr Arg Glu  
 65 70 75 80

Phe Gly Arg Trp Lys Val Asn Asn Leu Ala Val Glu Arg Arg Asn Phe  
 85 90 95

Leu Gly Ser Pro Leu Pro Leu Ala Pro Glu Phe Phe Arg Asn Ile Arg  
 100 105 110

Leu Leu Gly Arg Arg Pro Thr Leu Gln Gln Ile Thr Glu Asn Leu Ile  
 115 120 125

Lys Lys Tyr Gly Thr His Phe Leu Leu Ser Ala Thr Leu Gly Gly Glu

130	135	140
Glu Ser Leu Thr Ile Phe Val Asp Lys Arg Lys Leu Ser Lys Arg Ala		
145	150	155 160
Glu Gly Ser Asp Ser Thr Thr Asn Ser Ser Ser Val Thr Leu Glu Thr		
	165	170 175
Leu His Gln Leu Ala Ala Ser Tyr Phe Ile Asp Arg Asp Ser Thr Leu		
	180	185 190
Arg Arg Leu His His Ile Gln Ile Ala Ser Thr Ala Ile Lys Val Thr		
	195	200 205
Glu Thr Arg Thr Gly Pro Leu Gly Cys Ser Asn Tyr Asp Asn Leu Asp		
	210	215 220
Ser Val Ser Ser Val Leu Val Gln Ser Pro Glu Asn Lys Ile Gln Leu		
	225	230 235 240
Gln Gly Leu Gln Val Leu Leu Pro Asp Tyr Leu Gln Glu Arg Phe Val		
	245	250 255
Gln Ala Ala Leu Ser Tyr Ile Ala Cys Asn Ser Glu Gly Glu Phe Ile		
	260	265 270
Cys Lys Glu Asn Asp Cys Trp Cys His Cys Gly Pro Lys Phe Pro Glu		
	275	280 285
Cys Asn Cys Pro Ser Met Asp Ile Gln Ala Met Glu Glu Asn Leu Leu		
	290	295 300
Arg Ile Thr Glu Thr Trp Lys Ala Tyr Asn Ser Asp Phe Glu Glu Ser		
	305	310 315 320
Asp Glu Phe Lys Leu Phe Met Lys Arg Leu Pro Met Asn Tyr Phe Leu		
	325	330 335
Asn Thr Ser Thr Ile Met His Leu Trp Thr Met Asp Ser Asn Phe Gln		
	340	345 350
Arg Arg Tyr Glu Gln Leu Glu Asn Ser Met Lys Gln Leu Phe Leu Lys		
	355	360 365
Ala Gln Lys Ile Val His Lys Leu Phe Ser Leu Ser Lys Arg Cys His		
	370	375 380
Lys Gln Pro Leu Ile Ser Leu Pro Arg Gln Arg Thr Ser Thr Tyr Trp		
	385	390 395 400
Leu Thr Arg Ile Gln Ser Phe Leu Tyr Cys Asn Glu Asn Gly Leu Leu		
	405	410 415
Gly Ser Phe Ser Glu Glu Thr His Ser Cys Thr Cys Pro Asn Asp Gln		
	420	425 430
Val Val Cys Thr Ala Phe Leu Pro Cys Thr Val Gly Asp Ala Ser Ala		
	435	440 445
Cys Leu Thr Cys Ala Pro Asp Asn Arg Thr Arg Cys Gly Thr Cys Asn		

450		455		460
Thr Gly Tyr Met Leu Ser Gln Gly Leu Cys Lys Pro Glu Val Ala Glu				
465		470		475
Ser Thr Asp His Tyr Ile Gly Phe Glu Thr Asp Leu Gln Asp Leu Glu				
	485		490	495
Met Lys Tyr Leu Leu Gln Lys Thr Asp Arg Arg Ile Glu Val His Ala				
	500		505	510
Ile Phe Ile Ser Asn Asp Met Arg Leu Asn Ser Trp Phe Asp Pro Ser				
	515		520	525
Trp Arg Lys Arg Met Leu Leu Thr Leu Lys Ser Asn Lys Tyr Lys Ser				
	530		535	540
Ser Leu Val His Met Ile Leu Gly Leu Ser Leu Gln Ile Cys Leu Thr				
	545		550	555
Lys Asn Ser Thr Leu Glu Pro Val Leu Ala Val Tyr Val Asn Pro Phe				
	565		570	575
Gly Gly Ser His Ser Glu Ser Trp Phe Met Pro Val Asn Glu Asn Ser				
	580		585	590
Phe Pro Asp Trp Glu Arg Thr Lys Leu Asp Leu Pro Leu Gln Cys Tyr				
	595		600	605
Asn Trp Thr Leu Thr Leu Gly Asn Lys Trp Lys Thr Phe Phe Glu Thr				
	610		615	620
Val His Ile Tyr Leu Arg Ser Arg Ile Lys Ser Asn Gly Pro Asn Gly				
	625		630	635
Asn Glu Ser Ile Tyr Tyr Glu Pro Leu Glu Phe Ile Asp Pro Ser Arg				
	645		650	655
Asn Leu Gly Tyr Met Lys Ile Asn Asn Ile Gln Val Phe Gly Tyr Ser				
	660		665	670
Met His Phe Asp Pro Glu Ala Ile Arg Asp Leu Ile Leu Gln Leu Asp				
	675		680	685
Tyr Pro Tyr Thr Gln Gly Ser Gln Asp Ser Ala Leu Leu Gln Leu Leu				
	690		695	700
Glu Ile Arg Asp Arg Val Asn Lys Leu Ser Pro Pro Gly Gln Arg Arg				
	705		710	715
Leu Asp Leu Phe Ser Cys Leu Leu Arg His Arg Leu Lys Leu Ser Thr				
	725		730	735
Ser Glu Val Val Arg Ile Gln Ser Ala Leu Gln Ala Phe Asn Ala Lys				
	740		745	750
Leu Pro Asn Thr Met Asp Tyr Asp Thr Thr Lys Leu Cys Ser				
	755		760	765

<210> 2230  
 <211> 61  
 <212> PRT  
 <213> Homo sapiens

<400> 2230  
 Met Lys Ser Ala Leu His Arg Asp Ile Cys Ile Leu Met Leu Thr Ala  
   1                  5                  10                  15  
 Ala Leu Phe Thr Ile Ala Lys Thr Glu Lys Gln His Lys Cys Pro Ser  
           20                  25                  30  
 Ile Asp Glu Gln Ile Asn Asn Leu Gln Tyr Ile Cys Thr Met Glu Tyr  
           35                  40                  45  
 His Ser Ala Leu Gln Lys Glu Met Leu Leu Tyr Leu Gln  
       50                  55                  60

<210> 2231  
 <211> 133  
 <212> PRT  
 <213> Homo sapiens

<400> 2231  
 Met Arg Met Ser Leu Ala Gln Arg Val Leu Leu Thr Trp Leu Phe Thr  
   1                  5                  10                  15  
 Leu Leu Phe Leu Ile Met Leu Val Leu Lys Leu Asp Glu Lys Ala Pro  
           20                  25                  30  
 Trp Asn Trp Phe Leu Ile Phe Ile Pro Val Trp Ile Phe Asp Thr Ile  
       35                  40                  45  
 Leu Leu Val Leu Leu Ile Val Lys Met Ala Gly Arg Cys Lys Ser Gly  
       50                  55                  60  
 Phe Asp Pro Arg His Gly Ser His Asn Ile Lys Lys Lys Ala Trp Tyr  
       65                  70                  75                  80  
 Leu Ile Ala Met Leu Leu Lys Leu Ala Phe Cys Leu Ala Leu Cys Ala  
           85                  90                  95  
 Lys Leu Glu Gln Phe Thr Thr Met Asn Leu Ser Tyr Val Phe Ile Pro  
          100                 105                 110  
 Leu Trp Ala Leu Leu Ala Gly Ala Leu Thr Glu Leu Gly Tyr Asn Val  
      115                 120                 125  
 Phe Phe Val Arg Asp  
      130

<210> 2232  
 <211> 131  
 <212> PRT  
 <213> Homo sapiens

&lt;400&gt; 2232

Met Ser Leu Ala Gln Arg Val Leu Leu Thr Trp Leu Phe Thr Leu Leu  
 1 5 10 15

Phe Leu Ile Met Leu Val Leu Lys Leu Asp Glu Lys Ala Pro Trp Asn  
 20 25 30

Trp Phe Leu Ile Phe Ile Pro Val Trp Ile Phe Asp Thr Ile Leu Leu  
 35 40 45

Val Leu Leu Ile Val Lys Met Ala Gly Arg Cys Lys Ser Gly Phe Asp  
 50 55 60

Pro Arg His Gly Ser His Asn Ile Lys Lys Lys Ala Trp Tyr Leu Ile  
 65 70 75 80

Ala Met Leu Leu Lys Leu Ala Phe Cys Leu Ala Leu Cys Ala Lys Leu  
 85 90 95

Glu Gln Phe Thr Thr Met Asn Leu Ser Tyr Val Phe Ile Pro Leu Trp  
 100 105 110

Ala Leu Leu Ala Gly Ala Leu Thr Glu Leu Gly Tyr Asn Val Phe Phe  
 115 120 125

Val Arg Asp  
 130

&lt;210&gt; 2233

&lt;211&gt; 298

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2233

Met Lys Thr Leu Gln Ser Thr Leu Leu Leu Leu Leu Leu Val Pro Leu  
 1 5 10 15

Ile Lys Pro Ala Pro Pro Thr Gln Gln Asp Ser Arg Ile Ile Tyr Asp  
 20 25 30

Tyr Gly Thr Asp Asn Phe Glu Glu Ser Ile Phe Ser Gln Asp Tyr Glu  
 35 40 45

Asp Lys Tyr Leu Asp Gly Lys Asn Ile Lys Glu Lys Glu Thr Val Ile  
 50 55 60

Ile Pro Asn Glu Lys Ser Leu Gln Leu Gln Lys Asp Glu Ala Ile Thr  
 65 70 75 80

Pro Leu Pro Pro Lys Lys Glu Asn Asp Glu Met Pro Thr Cys Leu Leu  
 85 90 95

Cys Val Cys Leu Ser Gly Ser Val Tyr Cys Glu Glu Val Asp Ile Asp  
 100 105 110

Ala Val Pro Pro Leu Pro Lys Glu Ser Ala Tyr Leu Tyr Ala Arg Phe  
 115 120 125

Asn Lys Ile Lys Lys Leu Thr Ala Lys Asp Phe Ala Asp Ile Pro Asn  
 130 135 140  
 Leu Arg Arg Leu Asp Phe Thr Gly Asn Leu Ile Glu Asp Ile Glu Asp  
 145 150 155 160  
 Gly Thr Phe Ser Lys Leu Ser Leu Leu Glu Glu Leu Ser Leu Ala Glu  
 165 170 175  
 Asn Gln Leu Leu Lys Leu Pro Val Leu Pro Pro Lys Leu Thr Leu Phe  
 180 185 190  
 Asn Ala Lys Tyr Asn Lys Ile Lys Ser Arg Gly Ile Lys Ala Asn Ala  
 195 200 205  
 Phe Lys Lys Leu Asn Asn Leu Thr Phe Leu Tyr Leu Asp His Asn Ala  
 210 215 220  
 Leu Glu Ser Val Pro Leu Asn Leu Pro Glu Ser Leu Arg Val Ile His  
 225 230 235 240  
 Leu Gln Phe Asn Asn Ile Ala Ser Ile Thr Asp Asp Thr Phe Cys Lys  
 245 250 255  
 Ala Asn Asp Thr Ser Tyr Ile Arg Asp Arg Ile Glu Glu Ile Arg Leu  
 260 265 270  
 Glu Gly Asn Pro Ile Val Leu Gly Lys His Pro Asn Ser Phe Ile Cys  
 275 280 285  
 Leu Lys Arg Leu Pro Ile Gly Ser Tyr Phe  
 290 295

<210> 2234  
 <211> 158  
 <212> PRT  
 <213> Homo sapiens

<400> 2234

Met Ala Ala Ala Ser Ala Gly Ala Thr Arg Leu Leu Leu Leu Leu Leu  
 1 5 10 15  
 Met Ala Val Ala Ala Pro Ser Arg Ala Arg Gly Ser Gly Cys Arg Ala  
 20 25 30  
 Gly Thr Gly Ala Arg Gly Ala Gly Ala Glu Gly Arg Glu Gly Glu Ala  
 35 40 45  
 Cys Gly Thr Val Gly Leu Leu Leu Glu His Ser Phe Glu Ile Asp Asp  
 50 55 60  
 Ser Ala Asn Phe Arg Lys Arg Gly Ser Leu Leu Trp Asn Gln Gln Asp  
 65 70 75 80  
 Gly Thr Leu Ser Leu Ser Gln Arg Gln Leu Ser Glu Glu Glu Arg Gly  
 85 90 95



Arg Leu Arg Asp Val Ala Ala Ser Tyr Leu Asp Cys Gly Ala Thr Arg  
 100 105 110

Ala Cys Gly Pro Leu Leu Cys Ala Thr Leu Pro Val Ser Leu Phe Lys  
 115 120 125

Asn Ile Asp Asp Thr Leu Lys Cys Val Asn Val Leu Lys Ser Tyr Ser  
 130 135 140

Phe Gln Gln Pro Lys Ala Thr Val Val Leu Ala Arg Arg Ser  
 145 150 155

<210> 2235  
 <211> 58  
 <212> PRT  
 <213> Homo sapiens

<400> 2235  
 Met Thr Lys Ala Leu Ile Pro Thr Pro Phe Phe Leu Ala Ala Met Trp  
 1 5 10 15

Pro Leu Trp Gln His Ser Trp Ala Gln Thr Leu Arg Ser Gln Arg Gln  
 20 25 30

Glu Ala Asp Ala Trp Ala Lys Ala Gly Ala Gly Asn Ser Arg Gly Ser  
 35 40 45

Leu Ala Trp Arg Leu Leu Met Ser Ser Gly  
 50 55

<210> 2236  
 <211> 71  
 <212> PRT  
 <213> Homo sapiens

<400> 2236  
 Met Leu Val Ala Ala Ile Val Phe Ile Ser Phe Gly Val Val Ala Ala  
 1 5 10 15

Phe Cys Cys Ala Ile Val Asp Gly Val Phe Ala Ala Gln His Ile Glu  
 20 25 30

Pro Lys Ala Pro His His Gly Lys Met Pro Val Tyr Ser Ser Gly Val  
 35 40 45

Gly Tyr Leu Tyr Asp Val Tyr Gln Thr Glu Val Ser Arg Ser Thr Glu  
 50 55 60

Ile His Val Gly Leu Leu Asn  
 65 70

<210> 2237  
 <211> 605  
 <212> PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2237

Met Gly Arg Leu Leu Arg Ala Ala Arg Leu Pro Pro Leu Leu Ser Pro  
 1 5 10 15  
 Leu Leu Leu Leu Leu Val Gly Gly Ala Phe Leu Gly Ala Cys Val Ala  
 20 25 30  
 Gly Ser Asp Glu Pro Gly Pro Glu Gly Leu Thr Ser Thr Ser Leu Leu  
 35 40 45  
 Asp Leu Leu Leu Pro Thr Gly Leu Glu Pro Leu Asp Ser Glu Glu Pro  
 50 55 60  
 Ser Glu Thr Met Gly Leu Gly Ala Gly Leu Gly Ala Pro Gly Ser Gly  
 65 70 75 80  
 Phe Pro Ser Glu Glu Asn Glu Glu Ser Arg Ile Leu Gln Pro Pro Gln  
 85 90 95  
 Tyr Phe Trp Glu Glu Glu Glu Glu Leu Asn Asp Ser Ser Leu Asp Leu  
 100 105 110  
 Gly Pro Thr Ala Asp Tyr Val Phe Pro Asp Leu Thr Glu Lys Ala Gly  
 115 120 125  
 Ser Ile Glu Asp Thr Ser Gln Ala Gln Glu Leu Pro Asn Leu Pro Ser  
 130 135 140  
 Pro Leu Pro Lys Met Asn Leu Val Glu Pro Pro Trp His Met Pro Pro  
 145 150 155 160  
 Arg Glu Glu Glu Glu Glu Glu Glu Glu Glu Glu Arg Glu Lys Glu  
 165 170 175  
 Glu Val Glu Lys Gln Glu Glu Glu Glu Glu Glu Glu Leu Leu Pro Val  
 180 185 190  
 Asn Gly Ser Gln Glu Glu Ala Lys Pro Gln Val Arg Asp Phe Ser Leu  
 195 200 205  
 Thr Ser Ser Ser Gln Thr Pro Gly Ala Thr Lys Ser Arg His Glu Asp  
 210 215 220  
 Ser Gly Asp Gln Ala Ser Ser Gly Val Glu Val Glu Ser Ser Met Gly  
 225 230 235 240  
 Pro Ser Leu Leu Leu Pro Ser Val Thr Pro Thr Thr Val Thr Pro Gly  
 245 250 255  
 Asp Gln Asp Ser Thr Ser Gln Glu Ala Glu Ala Thr Val Leu Pro Ala  
 260 265 270  
 Ala Gly Leu Gly Val Glu Phe Glu Ala Pro Gln Glu Ala Ser Glu Glu  
 275 280 285  
 Ala Thr Ala Gly Ala Ala Gly Leu Ser Gly Gln His Glu Glu Val Pro  
 290 295 300

Ala Leu Pro Ser Phe Pro Gln Thr Thr Ala Pro Ser Gly Ala Glu His  
 305 310 315 320  
 Pro Asp Glu Asp Pro Leu Gly Ser Arg Thr Ser Ala Ser Ser Pro Leu  
 325 330 335  
 Ala Pro Gly Asp Met Glu Leu Thr Pro Ser Ser Ala Thr Leu Gly Gln  
 340 345 350  
 Glu Asp Leu Asn Gln Gln Leu Leu Glu Gly Gln Ala Ala Glu Ala Gln  
 355 360 365  
 Ser Arg Ile Pro Trp Asp Ser Thr Gln Val Ile Cys Lys Asp Trp Ser  
 370 375 380  
 Asn Leu Ala Gly Lys Asn Tyr Ile Ile Leu Asn Met Thr Glu Asn Ile  
 385 390 395 400  
 Asp Cys Glu Val Phe Arg Gln His Arg Gly Pro Gln Leu Leu Ala Leu  
 405 410 415  
 Val Glu Glu Val Leu Pro Arg His Gly Ser Gly His His Gly Ala Trp  
 420 425 430  
 His Ile Ser Leu Ser Lys Pro Ser Glu Lys Glu Gln His Leu Leu Met  
 435 440 445  
 Thr Leu Val Gly Glu Gln Gly Val Val Pro Thr Gln Asp Val Leu Ser  
 450 455 460  
 Met Leu Gly Asp Ile Arg Arg Ser Leu Glu Glu Ile Gly Ile Gln Asn  
 465 470 475 480  
 Tyr Ser Thr Thr Ser Ser Cys Gln Ala Arg Ala Ser Gln Val Arg Ser  
 485 490 495  
 Asp Tyr Gly Thr Leu Phe Val Val Leu Val Val Ile Gly Ala Ile Cys  
 500 505 510  
 Ile Ile Ile Ile Ala Leu Gly Leu Leu Tyr Asn Cys Trp Gln Arg Arg  
 515 520 525  
 Leu Pro Lys Leu Lys His Val Ser His Gly Glu Glu Leu Arg Phe Val  
 530 535 540  
 Glu Asn Gly Cys His Asp Asn Pro Thr Leu Asp Val Ala Ser Asp Ser  
 545 550 555 560  
 Gln Ser Glu Met Gln Glu Lys His Pro Ser Leu Asn Gly Gly Gly Ala  
 565 570 575  
 Leu Asn Gly Pro Gly Ser Trp Gly Ala Leu Met Gly Gly Lys Arg Asp  
 580 585 590  
 Pro Glu Asp Ser Asp Val Phe Glu Glu Asp Thr His Leu  
 595 600 605

&lt;210&gt; 2238

&lt;211&gt; 432

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2238

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Met Asp Ala Arg Trp Trp Ala Val Val Val Leu Ala Ala Phe Pro Ser
 1           5           10           15

Leu Gly Ala Gly Gly Glu Thr Pro Glu Ala Pro Pro Glu Ser Trp Thr
          20           25           30

Gln Leu Trp Phe Phe Arg Phe Val Val Asn Ala Ala Gly Tyr Ala Ser
          35           40           45

Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn
 50           55           60

Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys
 65           70           75           80

Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro
          85           90           95

Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu
          100          105          110

Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val
          115          120          125

Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser
          130          135          140

Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg
          145          150          155          160

Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln
          165          170          175

Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser
          180          185          190

Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser
          195          200          205

Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met
          210          215          220

Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr
          225          230          235          240

Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser
          245          250          255

Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu
          260          265          270

Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp
          275          280          285

Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe

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290                      295                      300  
 Gly Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu  
 305                      310                      315                      320  
 Gln Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu  
                     325                      330                      335  
 Phe Ala Ala His Ala Leu Leu Leu Ser Ile Cys Ser Ala Cys Gly Gln  
                     340                      345                      350  
 Leu Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr  
                     355                      360                      365  
 Ile Ile Met Thr Leu Arg Gln Ala Phe Ala Ile Leu Leu Ser Cys Leu  
                     370                      375                      380  
 Leu Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val  
 385                      390                      395                      400  
 Val Phe Ala Ala Leu Leu Leu Arg Val Tyr Ala Arg Gly Arg Leu Lys  
                     405                      410                      415  
 Gln Arg Gly Lys Lys Ala Val Pro Val Glu Ser Pro Val Gln Lys Val  
                     420                      425                      430

&lt;210&gt; 2239

&lt;211&gt; 432

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2239

Met Asp Ala Arg Trp Trp Ala Val Val Val Leu Ala Ala Phe Pro Ser  
   1                    5                    10                    15  
 Leu Gly Ala Gly Gly Glu Thr Pro Glu Ala Pro Pro Glu Ser Trp Thr  
                     20                    25                    30  
 Gln Leu Trp Phe Phe Arg Phe Val Val Asn Ala Ala Gly Tyr Ala Ser  
                     35                    40                    45  
 Phe Met Val Pro Gly Tyr Leu Leu Val Gln Tyr Phe Arg Arg Lys Asn  
                     50                    55                    60  
 Tyr Leu Glu Thr Gly Arg Gly Leu Cys Phe Pro Leu Val Lys Ala Cys  
                     65                    70                    75                    80  
 Val Phe Gly Asn Glu Pro Lys Ala Ser Asp Glu Val Pro Leu Ala Pro  
                     85                    90                    95  
 Arg Thr Glu Ala Ala Glu Thr Thr Pro Met Trp Gln Ala Leu Lys Leu  
                     100                    105                    110  
 Leu Phe Cys Ala Thr Gly Leu Gln Val Ser Tyr Leu Thr Trp Gly Val  
                     115                    120                    125

Leu Gln Glu Arg Val Met Thr Arg Ser Tyr Gly Ala Thr Ala Thr Ser  
 130 135 140  
 Pro Gly Glu Arg Phe Thr Asp Ser Gln Phe Leu Val Leu Met Asn Arg  
 145 150 155 160  
 Val Leu Ala Leu Ile Val Ala Gly Leu Ser Cys Val Leu Cys Lys Gln  
 165 170 175  
 Pro Arg His Gly Ala Pro Met Tyr Arg Tyr Ser Phe Ala Ser Leu Ser  
 180 185 190  
 Asn Val Leu Ser Ser Trp Cys Gln Tyr Glu Ala Leu Lys Phe Val Ser  
 195 200 205  
 Phe Pro Thr Gln Val Leu Ala Lys Ala Ser Lys Val Ile Pro Val Met  
 210 215 220  
 Leu Met Gly Lys Leu Val Ser Arg Arg Ser Tyr Glu His Trp Glu Tyr  
 225 230 235 240  
 Leu Thr Ala Thr Leu Ile Ser Ile Gly Val Ser Met Phe Leu Leu Ser  
 245 250 255  
 Ser Gly Pro Glu Pro Arg Ser Ser Pro Ala Thr Thr Leu Ser Gly Leu  
 260 265 270  
 Ile Leu Leu Ala Gly Tyr Ile Ala Phe Asp Ser Phe Thr Ser Asn Trp  
 275 280 285  
 Gln Asp Ala Leu Phe Ala Tyr Lys Met Ser Ser Val Gln Met Met Phe  
 290 295 300  
 Gly Val Asn Phe Phe Ser Cys Leu Phe Thr Val Gly Ser Leu Leu Glu  
 305 310 315 320  
 Gln Gly Ala Leu Leu Glu Gly Thr Arg Phe Met Gly Arg His Ser Glu  
 325 330 335  
 Phe Ala Ala His Ala Leu Leu Leu Ser Ile Cys Ser Ala Cys Gly Gln  
 340 345 350  
 Leu Phe Ile Phe Tyr Thr Ile Gly Gln Phe Gly Ala Ala Val Phe Thr  
 355 360 365  
 Ile Ile Met Thr Leu Arg Gln Ala Phe Ala Ile Leu Leu Ser Cys Leu  
 370 375 380  
 Leu Tyr Gly His Thr Val Thr Val Val Gly Gly Leu Gly Val Ala Val  
 385 390 395 400  
 Val Phe Ala Ala Leu Leu Leu Arg Val Tyr Ala Arg Gly Arg Leu Lys  
 405 410 415  
 Gln Arg Gly Lys Lys Ala Val Pro Val Glu Ser Pro Val Gln Lys Val  
 420 425 430

&lt;210&gt; 2240

&lt;211&gt; 69

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2240

Met Lys Ala Val Val Leu Leu Lys Ala Phe Ser Phe Ser Leu Cys Ser  
 1 5 10 15

Ala Ile Ser Pro Val Thr Pro Gly Phe Arg Gln Thr Ile Asn Val Leu  
 20 25 30

Asp Thr Val Ala Phe Ser Ala Phe Phe Ile Tyr Leu Phe Thr Val Thr  
 35 40 45

Ala Ser Ile Asn Phe Tyr Ala Tyr Phe Ser Ser Phe Leu Ala Gly Ala  
 50 55 60

Pro Phe Ile Lys Ile  
 65

&lt;210&gt; 2241

&lt;211&gt; 57

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2241

Met Leu Asp Leu Ser Pro Ser Leu Thr Leu Lys Phe Cys Phe Leu His  
 1 5 10 15

Leu Val Phe Leu Pro Phe Lys Val Tyr Cys Gln Leu Leu Gln Glu Leu  
 20 25 30

Leu Ser Lys Pro Val Ser Lys Leu Pro Leu Thr Pro Gln Cys Gln Ser  
 35 40 45

Trp Ala Arg Pro Leu Gly Asp Leu Glu  
 50 55

&lt;210&gt; 2242

&lt;211&gt; 145

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2242

Met Leu Arg Thr Leu Val Leu Lys Gln Thr Leu Asp Leu Leu Leu Pro  
 1 5 10 15

Leu Leu Glu Ala Leu Leu Val Leu Gly Val Pro Gln His Leu Glu Leu  
 20 25 30

Gln Pro Leu Pro Val Gln Val Ser Leu Leu Leu Leu Gln Leu Leu Asp  
 35 40 45

Leu Gly Ser Leu Lys Ser His Arg Leu His His Phe His Ser Lys Ala  
 50 55 60  
 Leu Gln Leu Pro Val Leu Asp His Leu Asp Phe Gln Asp Phe Gln Leu  
 65 70 75 80  
 Pro Trp Gln Gln Val Leu Ser Glu Leu Pro Val Ala Pro Ala Phe Gly  
 85 90 95  
 Gly Gly Ser Ser Val Ala Gly Phe Gly Ser Pro Gly Leu Thr Phe Ser  
 100 105 110  
 His Trp Leu Phe Leu Ser His Pro Val Asp Thr Phe Gly Asn Ser Gln  
 115 120 125  
 Ala Tyr Pro Thr Ser Leu Ser Ala Leu Gln Ala Ser Ile Asn Cys Asn  
 130 135 140  
 Arg  
 145

<210> 2243  
 <211> 77  
 <212> PRT  
 <213> Homo sapiens

<400> 2243  
 Met Ala Ile Cys Gln Phe Phe Leu Gln Gly Arg Cys Arg Phe Gly Asp  
 1 5 10 15  
 Arg Cys Trp Asn Glu His Pro Gly Ala Arg Gly Ala Gly Gly Gly Arg  
 20 25 30  
 Gln Gln Pro Gln Gln Gln Pro Ser Gly Asn Asn Arg Arg Gly Trp Asn  
 35 40 45  
 Thr Thr Ser Gln Arg Tyr Ser Asn Val Ile Gln Pro Ser Ser Phe Ser  
 50 55 60  
 Lys Ser Thr Pro Trp Gly Gly Ser Arg Asp Gln Glu Thr  
 65 70 75

<210> 2244  
 <211> 86  
 <212> PRT  
 <213> Homo sapiens

<400> 2244  
 Met Tyr Lys Leu Glu Leu Ile Phe Pro Thr Ala Leu Val Leu Pro Ile  
 1 5 10 15  
 Leu Val Asn Gly Thr Val Ile Cys Pro Leu Lys Ala Arg Asn Ser Val  
 20 25 30  
 Ile Pro Ser Ser Ser Phe Leu Thr Ser Leu Gln Leu Thr Ile Trp Ile



	35						40					45							
Gln	Pro	Cys	Leu	Phe	Leu	Pro	Thr	Thr	Thr	Gly	Leu	Ser	Ser	Gly	Tyr				
	50					55					60								
His	Thr	Phe	Leu	Ser	Gly	Leu	His	Ser	Cys	His	Ile	Ser	Phe	Ala	Thr				
65					70					75					80				
Ala	Ile	Pro	Gly	Cys	Leu														
					85														

&lt;210&gt; 2245

&lt;211&gt; 208

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2245

Met	Gly	Leu	Gly	Ala	Arg	Gly	Ala	Trp	Ala	Ala	Leu	Leu	Leu	Gly	Thr				
1				5				10						15					
Leu	Gln	Val	Leu	Ala	Leu	Leu	Gly	Ala	Ala	His	Glu	Ser	Ala	Ala	Met				
			20				25						30						
Ala	Ala	Ser	Ala	Asn	Ile	Glu	Asn	Ser	Gly	Leu	Pro	His	Asn	Ser	Ser				
		35				40						45							
Ala	Asn	Ser	Thr	Glu	Thr	Leu	Gln	His	Val	Pro	Ser	Asp	His	Thr	Asn				
	50					55					60								
Glu	Thr	Ser	Asn	Ser	Thr	Val	Lys	Pro	Pro	Thr	Ser	Val	Ala	Ser	Asp				
65					70					75					80				
Ser	Ser	Asn	Thr	Thr	Val	Thr	Thr	Met	Lys	Pro	Thr	Ala	Ala	Ser	Asn				
			85					90						95					
Thr	Thr	Thr	Pro	Gly	Met	Val	Ser	Thr	Asn	Met	Thr	Ser	Thr	Thr	Leu				
			100					105						110					
Lys	Ser	Thr	Pro	Lys	Thr	Thr	Ser	Val	Ser	Gln	Asn	Thr	Ser	Gln	Ile				
		115					120					125							
Ser	Thr	Ser	Thr	Met	Thr	Val	Thr	His	Asn	Ser	Ser	Val	Thr	Ser	Ala				
	130					135					140								
Ala	Ser	Ser	Val	Thr	Ile	Thr	Thr	Thr	Met	His	Ser	Glu	Ala	Lys	Lys				
145					150					155					160				
Gly	Ser	Lys	Phe	Asp	Thr	Gly	Ser	Phe	Val	Gly	Gly	Ile	Val	Leu	Thr				
			165					170						175					
Leu	Gly	Val	Leu	Ser	Ile	Leu	Tyr	Ile	Gly	Cys	Lys	Met	Tyr	Tyr	Ser				
		180						185					190						
Arg	Arg	Gly	Ile	Arg	Tyr	Arg	Thr	Ile	Asp	Glu	His	Asp	Ala	Ile	Ile				
		195					200					205							

&lt;210&gt; 2246

&lt;211&gt; 215

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2246

Met Arg Leu Pro Ala Trp Cys Arg His Thr Thr Leu Ala Ile Ser Cys  
 1 5 10 15

Trp His Cys Leu Val Leu Ala Arg Ala Ser Ala Asp Ser Ala Ser Leu  
 20 25 30

Pro Thr Ile Ser His Leu Gly Val Lys Pro Leu Ser Val Gly Trp Gly  
 35 40 45

Ala Pro Ser Thr Leu Pro Val Ser Pro Cys Gly Gly Lys Pro Ala Ala  
 50 55 60

Pro Thr Ser Ala Ser Pro Ala Ala Ala Pro Leu Arg Phe Trp Arg Pro  
 65 70 75 80

Gly Ala Ser Gly Gly Gly Ala Gly Gly Thr Arg Arg Leu Ala Leu Cys  
 85 90 95

Arg Leu Val Thr Ala Arg Thr Thr Leu Ala Thr Gly Thr Pro Gly Leu  
 100 105 110

Ser Ala Arg Pro Arg Gln Arg Pro Cys Leu Leu Pro Val Leu Pro Arg  
 115 120 125

Arg Pro Ala Glu Leu Ser Val Ser Leu Glu Pro Ser Pro Gly Ser Ser  
 130 135 140

Gly Arg Gly Phe Leu Cys Leu Pro Phe Cys Lys Arg Asp Ala Asp Thr  
 145 150 155 160

Ser Leu Gly Gln Thr Leu Thr Ser Ser Cys Ser Leu Ser Ser Ile Leu  
 165 170 175

Val Gly Gly Thr Leu Arg Pro Arg Cys Ser Cys Pro Pro Phe Thr Gln  
 180 185 190

Arg Ser Ala Phe His Leu Arg Thr Pro His Asn Gln Tyr His His Gly  
 195 200 205

Ser Thr Ser Leu Ala Ser His  
 210 215

&lt;210&gt; 2247

&lt;211&gt; 139

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2247

Met Lys Thr Leu Leu Leu Leu Val Gly Leu Leu Leu Thr Trp Glu Asn

1	5	10	15
Gly Arg Val Leu	Gly Asp Gln Met Val Ser Asp Thr Glu Leu Gln Glu		
20	25	30	
Met Ser Thr Glu Gly Ser Lys Tyr Ile Asn Arg Glu Ile Lys Asn Ala			
35	40	45	
Leu Lys Gly Val Lys Gln Ile Lys Thr Leu Ile Glu Gln Thr Asn Glu			
50	55	60	
Glu Arg Lys Ser Leu Leu Thr Asn Leu Glu Glu Ala Lys Lys Lys Lys			
65	70	75	80
Glu Asp Ala Leu Asn Asp Thr Lys Asp Ser Glu Met Lys Leu Lys Ala			
85	90	95	
Ser Gln Gly Val Cys Asn Asp Thr Met Met Ala Leu Trp Glu Glu Cys			
100	105	110	
Lys Pro Cys Leu Lys Gln Thr Trp Gly Lys Gly Leu Arg Pro Ser Leu			
115	120	125	
Gln Lys Gln His Arg Ala Gly Trp Pro Pro Gly			
130	135		

&lt;210&gt; 2248

&lt;211&gt; 363

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2248

Met Lys Thr Leu Leu Leu Leu Val Gly Leu Leu Leu Thr Trp Glu Asn			
1	5	10	15
Gly Arg Val Leu Gly Asp Gln Met Val Ser Asp Thr Glu Leu Gln Glu			
20	25	30	
Met Ser Thr Glu Gly Ser Lys Tyr Ile Asn Arg Glu Ile Lys Asn Ala			
35	40	45	
Leu Lys Gly Val Lys Gln Ile Lys Thr Leu Ile Glu Gln Thr Asn Glu			
50	55	60	
Glu Arg Lys Ser Leu Leu Thr Asn Leu Glu Glu Ala Lys Lys Lys Lys			
65	70	75	80
Glu Asp Ala Leu Asn Asp Thr Lys Asp Ser Glu Met Lys Leu Lys Ala			
85	90	95	
Ser Gln Gly Val Cys Asn Asp Thr Met Met Ala Leu Trp Glu Glu Cys			
100	105	110	
Lys Pro Cys Leu Lys Gln Thr Cys Met Lys Phe Tyr Ala Arg Val Cys			
115	120	125	
Arg Ser Ser Thr Gly Leu Val Gly His Gln Val Glu Glu Phe Leu Asn			
130	135	140	

Gln Ser Ser Pro Phe Tyr Phe Trp Ile Asn Gly Asp Arg Ile Asp Ser  
 145 150 155 160  
 Leu Leu Glu Asn Asp Arg Gln Gln Thr His Ala Leu Asp Val Met Gln  
 165 170 175  
 Asp Ser Phe Asp Arg Ala Ser Ser Ile Met Asp Glu Leu Phe Gln Asp  
 180 185 190  
 Arg Phe Phe Thr Arg Glu Ala Gln Asp Pro Phe His Phe Ser Pro Phe  
 195 200 205  
 Ser Ser Phe Gln Arg Arg Pro Phe Phe Phe Asn Ile Lys His Arg Phe  
 210 215 220  
 Ala Arg Asn Ile Met Pro Phe Pro Gly Tyr Gln Pro Leu Asn Phe His  
 225 230 235 240  
 Asp Met Phe Gln Pro Phe Phe Asp Met Ile His Gln Ala Gln Gln Ala  
 245 250 255  
 Met Asp Val Asn Leu His Arg Leu Pro His Phe Pro Met Glu Phe Thr  
 260 265 270  
 Glu Glu Asp Asn Gln Asp Gly Ala Val Cys Lys Glu Ile Arg His Asn  
 275 280 285  
 Ser Thr Gly Cys Leu Lys Met Lys Asp Gln Cys Glu Lys Cys Arg Glu  
 290 295 300  
 Ile Leu Ser Val Asp Cys Ser Ser Asn Asn Pro Ala Gln Val Gln Leu  
 305 310 315 320  
 Arg Gln Glu Leu Asn Asn Ser Leu Gln Ile Ala Glu Lys Phe Thr Lys  
 325 330 335  
 Leu Val Arg Arg Ala Ala Ala Val Leu Pro Gly Glu Asp Val Gln His  
 340 345 350  
 Val Leu Pro Ala Glu Ala Ala Gly Arg Ala Val  
 355 360

&lt;210&gt; 2249

&lt;211&gt; 85

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2249

Met Ala Ala Gly Gly Cys Leu Leu Leu Leu Ala Phe Phe Pro Leu Ser  
 1 5 10 15  
 Arg Gly Ser His Phe His Leu Gln Lys Arg Ala Leu Ala Glu Ala Ser  
 20 25 30  
 Phe Glu Ala Thr Leu Cys Glu Leu Phe Val Ile Glu Thr Ala Ser Lys  
 35 40 45

Gly Thr Leu Leu Ile Ile Thr Ile Arg His Leu Val Thr Tyr Ile Ile  
 50 55 60

Val Ile Phe Lys Cys His Met Leu Lys Asn Glu Met Asn Ser Ser Ile  
 65 70 75 80

Lys Pro His Phe Gln  
 85

<210> 2250

<211> 184

<212> PRT

<213> Homo sapiens

<400> 2250

Met Lys Ala Leu Gly Ala Val Leu Leu Ala Leu Leu Leu Cys Gly Arg  
 1 5 10 15

Pro Gly Arg Gly Gln Thr Gln Gln Glu Glu Glu Glu Glu Asp Glu Asp  
 20 25 30

His Gly Pro Asp Asp Tyr Asp Glu Glu Asp Glu Asp Glu Val Glu Glu  
 35 40 45

Glu Glu Thr Asn Arg Leu Pro Gly Gly Arg Ser Arg Val Leu Leu Arg  
 50 55 60

Cys Tyr Thr Cys Lys Ser Leu Pro Arg Asp Glu Arg Cys Asn Leu Thr  
 65 70 75 80

Gln Asn Cys Ser His Gly Gln Thr Cys Thr Thr Leu Ile Ala His Gly  
 85 90 95

Asn Thr Glu Ser Gly Leu Leu Thr Thr His Ser Thr Trp Cys Thr Asp  
 100 105 110

Ser Cys Gln Pro Ile Thr Lys Thr Val Glu Gly Thr Gln Val Thr Met  
 115 120 125

Thr Cys Cys Gln Ser Ser Leu Cys Asn Val Pro Pro Trp Gln Ser Ser  
 130 135 140

Arg Val Gln Asp Pro Thr Gly Lys Gly Ala Gly Gly Pro Arg Gly Ser  
 145 150 155 160

Ser Glu Thr Val Gly Ala Ala Leu Leu Leu Asn Leu Leu Ala Gly Leu  
 165 170 175

Gly Ala Met Gly Ala Arg Arg Pro  
 180

<210> 2251

<211> 352

<212> PRT

<213> Homo sapiens

&lt;400&gt; 2251

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Met Val Glu Ala Leu Arg Ala Gly Ser Ala Arg Leu Val Ala Ala Pro
 1           5           10           15

Val Ala Thr Ala Asn Pro Ala Arg Cys Leu Ala Leu Asn Val Ser Leu
          20           25           30

Arg Glu Trp Thr Ala Arg Tyr Gly Ala Ala Pro Ala Ala Pro Arg Cys
          35           40           45

Asp Ala Leu Asp Gly Asp Ala Val Val Leu Leu Arg Ala Arg Asp Leu
          50           55           60

Phe Asn Leu Ser Ala Pro Leu Ala Arg Pro Val Gly Thr Ser Leu Phe
          65           70           75           80

Leu Gln Thr Ala Leu Arg Gly Trp Ala Val Gln Leu Leu Asp Leu Thr
          85           90           95

Phe Ala Ala Ala Arg Gln Pro Pro Leu Ala Thr Ala His Ala Arg Trp
          100          105          110

Lys Ala Glu Arg Glu Gly Arg Ala Arg Arg Ala Ala Leu Leu Arg Ala
          115          120          125

Leu Gly Ile Arg Leu Val Ser Trp Glu Gly Gly Arg Leu Glu Trp Phe
          130          135          140

Gly Cys Asn Lys Glu Thr Thr Arg Cys Phe Gly Thr Val Val Gly Asp
          145          150          155          160

Thr Pro Ala Tyr Leu Tyr Glu Glu Arg Trp Thr Pro Pro Cys Cys Leu
          165          170          175

Arg Ala Leu Arg Glu Thr Ala Arg Tyr Val Val Gly Val Leu Glu Ala
          180          185          190

Ala Gly Val Arg Tyr Trp Leu Glu Gly Gly Ser Leu Leu Gly Ala Ala
          195          200          205

Arg His Gly Asp Ile Ile Pro Trp Asp Tyr Asp Val Asp Leu Gly Ile
          210          215          220

Tyr Leu Glu Asp Val Gly Asn Cys Glu Gln Leu Arg Gly Ala Glu Ala
          225          230          235          240

Gly Ser Val Val Asp Glu Arg Gly Phe Val Trp Glu Lys Ala Val Glu
          245          250          255

Gly Asp Phe Phe Arg Val Gln Tyr Ser Glu Ser Asn His Leu His Val
          260          265          270

Asp Leu Trp Pro Phe Tyr Pro Arg Asn Gly Val Met Thr Lys Asp Thr
          275          280          285

Trp Leu Asp His Arg Gln Asp Val Glu Phe Pro Glu His Phe Leu Gln
          290          295          300

Pro Leu Val Pro Leu Pro Phe Ala Gly Phe Val Ala Gln Ala Pro Asn
          305          310          315          320

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Asn Tyr Arg Arg Phe Leu Glu Leu Lys Phe Gly Pro Gly Val Ile Glu  
 325 330 335

Asn Pro Gln Tyr Pro Asn Pro Ala Leu Leu Ser Leu Thr Gly Ser Gly  
 340 345 350

<210> 2252

<211> 448

<212> PRT

<213> Homo sapiens

<400> 2252

Met Ala Trp Ala Ser Arg Leu Gly Leu Leu Leu Ala Leu Leu Leu Pro  
 1 5 10 15

Val Val Gly Ala Ser Thr Pro Gly Thr Val Val Arg Leu Asn Lys Ala  
 20 25 30

Ala Leu Ser Tyr Val Ser Glu Ile Gly Lys Ala Pro Leu Gln Arg Ala  
 35 40 45

Leu Gln Val Thr Val Pro His Phe Leu Asp Trp Ser Gly Glu Ala Leu  
 50 55 60

Gln Pro Thr Arg Ile Arg Ile Leu Asn Val His Val Pro Arg Leu His  
 65 70 75 80

Leu Lys Phe Ile Ala Gly Phe Gly Val Arg Leu Leu Ala Ala Ala Asn  
 85 90 95

Phe Thr Phe Lys Val Phe Arg Ala Pro Glu Pro Leu Glu Leu Thr Leu  
 100 105 110

Pro Val Glu Leu Leu Ala Asp Thr Arg Val Thr Gln Ser Ser Ile Arg  
 115 120 125

Thr Pro Val Val Ser Ile Ser Ala Cys Ser Leu Phe Ser Gly His Ala  
 130 135 140

Asn Glu Phe Asp Gly Ser Asn Ser Thr Ser His Ala Leu Leu Val Leu  
 145 150 155 160

Val Gln Lys His Ile Lys Ala Val Leu Ser Asn Lys Leu Cys Leu Ser  
 165 170 175

Ile Ser Asn Leu Val Gln Gly Val Asn Val His Leu Gly Thr Leu Ile  
 180 185 190

Gly Leu Asn Pro Val Gly Pro Glu Ser Gln Ile Arg Tyr Ser Met Val  
 195 200 205

Ser Val Pro Thr Val Thr Ser Asp Tyr Ile Ser Leu Glu Val Asn Ala  
 210 215 220

Val Leu Phe Leu Leu Gly Lys Pro Ile Ile Leu Pro Thr Asp Ala Thr  
 225 230 235 240  
 Pro Phe Val Leu Pro Arg His Val Gly Thr Glu Gly Ser Met Ala Thr  
 245 250 255  
 Val Gly Leu Ser Gln Gln Leu Phe Asp Ser Ala Leu Leu Leu Leu Gln  
 260 265 270  
 Lys Ala Gly Ala Leu Asn Leu Asp Ile Thr Gly Gln Leu Arg Ser Asp  
 275 280 285  
 Asp Asn Leu Leu Asn Thr Ser Ala Leu Gly Arg Leu Ile Pro Glu Val  
 290 295 300  
 Ala Arg Gln Phe Pro Glu Pro Met Pro Val Val Leu Lys Val Arg Leu  
 305 310 315 320  
 Gly Ala Thr Pro Val Ala Met Leu His Thr Asn Asn Ala Thr Leu Arg  
 325 330 335  
 Leu Gln Pro Phe Val Glu Val Leu Ala Thr Ala Ser Asn Ser Ala Phe  
 340 345 350  
 Gln Ser Leu Phe Ser Leu Asp Val Val Val Asn Leu Arg Leu Gln Leu  
 355 360 365  
 Ser Val Ser Lys Val Lys Leu Gln Gly Thr Thr Ser Val Leu Gly Asp  
 370 375 380  
 Val Gln Leu Thr Val Ala Ser Ser Asn Val Gly Phe Ile Asp Thr Asp  
 385 390 395 400  
 Gln Val Arg Thr Leu Met Gly Thr Val Phe Glu Lys Pro Leu Leu Asp  
 405 410 415  
 His Leu Asn Ala Leu Leu Ala Met Gly Ile Ala Leu Pro Gly Val Val  
 420 425 430  
 Asn Leu His Tyr Val Pro Leu Arg Ser Leu Ser Met Arg Ala Thr Trp  
 435 440 445

&lt;210&gt; 2253

&lt;211&gt; 183

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2253

Met Glu Pro Glu Glu Gly Thr Pro Leu Trp Arg Leu Gln Lys Leu Pro  
 1 5 10 15

Ala Glu Leu Gly Pro Gln Leu Leu His Lys Ile Ile Asp Gly Ile Cys  
 20 25 30

Gly Arg Ala Tyr Pro Val Tyr Gln Asp Tyr His Thr Val Trp Glu Ser



35 40 45  
 Glu Glu Trp Met His Val Leu Glu Asp Ile Ala Lys Phe Phe Lys Ala  
 50 55 60  
 Ile Val Gly Lys Asn Leu Pro Asp Glu Glu Ile Phe Gln Gln Leu Asn  
 65 70 75 80  
 Gln Leu Asn Ser Leu His Gln Glu Thr Ile Met Lys Cys Val Lys Ser  
 85 90 95  
 Arg Lys Asp Glu Ile Lys Gln Ala Leu Ser Arg Glu Ile Val Ala Ile  
 100 105 110  
 Ser Ser Ala Gln Leu Gln Asp Phe Asp Trp Gln Val Lys Leu Ala Leu  
 115 120 125  
 Ser Ser Asp Lys Ile Ala Ala Leu Arg Met Pro Leu Leu Ser Leu His  
 130 135 140  
 Leu Asp Val Lys Glu Asn Gly Glu Val Lys Pro Tyr Ser Ile Glu Met  
 145 150 155 160  
 Ser Arg Glu Glu Leu Gln Asn Leu Ile Gln Ser Leu Glu Ala Ala Asn  
 165 170 175  
 Lys Val Val Leu Gln Leu Lys  
 180

&lt;210&gt; 2254

&lt;211&gt; 121

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2254

Met Pro Cys Gly Arg Gln His Leu Gln Asn Leu Asp Asp Ala Val Asn  
 1 5 10 15  
 Gly Ser Ala Trp Thr Ile Leu Leu Leu Thr Glu Asn Phe Leu Arg Asp  
 20 25 30  
 Thr Trp Cys Asn Phe Gln Phe Tyr Thr Ser Leu Met Asn Ser Val Asn  
 35 40 45  
 Arg Gln His Lys Tyr Asn Ser Val Ile Pro Met Arg Pro Leu Asn Asn  
 50 55 60  
 Pro Leu Pro Arg Glu Arg Thr Pro Phe Ala Leu Gln Thr Ile Asn Ala  
 65 70 75 80  
 Leu Glu Glu Glu Ser Arg Gly Phe Pro Thr Gln Val Glu Arg Ile Phe  
 85 90 95  
 Gln Glu Ser Val Tyr Lys Thr Gln Gln Thr Ile Trp Lys Glu Thr Arg  
 100 105 110  
 Asn Met Val Gln Arg Gln Phe Ile Ala  
 115 120

&lt;210&gt; 2255

&lt;211&gt; 251

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2255

Met Leu Phe His Tyr Asp Trp Ile Ser Ile Pro Leu Val Tyr Thr Gln  
 1 5 10 15

Val Val Thr Ile Ala Val Tyr Ser Phe Phe Ala Leu Ser Leu Val Gly  
 20 25 30

Arg Gln Phe Val Glu Pro Glu Ala Gly Ala Ala Lys Pro Gln Lys Leu  
 35 40 45

Leu Lys Pro Gly Gln Glu Pro Ala Pro Ala Leu Gly Asp Pro Asp Met  
 50 55 60

Tyr Val Pro Leu Thr Thr Leu Leu Gln Phe Phe Phe Tyr Ala Gly Trp  
 65 70 75 80

Leu Lys Val Ala Glu Gln Ile Ile Asn Pro Phe Gly Glu Asp Asp Asp  
 85 90 95

Asp Phe Glu Thr Asn Gln Leu Ile Asp Arg Asn Leu Gln Val Ser Leu  
 100 105 110

Leu Ser Val Asp Glu Met Tyr Gln Asn Leu Pro Pro Ala Glu Lys Asp  
 115 120 125

Gln Tyr Trp Asp Glu Asp Gln Pro Gln Pro Pro Tyr Thr Val Ala Thr  
 130 135 140

Ala Ala Glu Ser Leu Arg Pro Ser Phe Leu Gly Ser Thr Phe Asn Leu  
 145 150 155 160

Arg Met Ser Asp Asp Pro Glu Gln Ser Leu Gln Val Glu Ala Ser Pro  
 165 170 175

Gly Ser Gly Arg Pro Ala Pro Ala Ala Gln Thr Pro Leu Leu Gly Arg  
 180 185 190

Phe Leu Gly Val Gly Ala Pro Ser Pro Ala Ile Ser Leu Arg Asn Phe  
 195 200 205

Gly Arg Val Arg Gly Thr Pro Arg Pro Pro His Leu Leu Arg Phe Arg  
 210 215 220

Ala Glu Glu Gly Gly Asp Pro Glu Ala Ala Ala Arg Ile Glu Glu Glu  
 225 230 235 240

Ser Ala Glu Ser Gly Asp Glu Ala Leu Glu Pro  
 245 250

&lt;210&gt; 2256

&lt;211&gt; 125

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2256

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Met Arg Pro Gly Lys Lys Val Leu Val Met Gly Ile Val Asp Leu Asn
 1             5             10             15
Pro Glu Ser Phe Ala Ile Ser Leu Thr Cys Gly Asp Ser Glu Asp Pro
      20             25             30
Pro Ala Asp Val Ala Ile Glu Leu Lys Ala Val Phe Thr Asp Arg Gln
      35             40             45
Leu Leu Arg Asn Ser Cys Ile Ser Gly Glu Arg Gly Glu Glu Gln Ser
      50             55             60
Ala Ile Pro Tyr Phe Pro Phe Ile Pro Asp Gln Pro Phe Arg Val Glu
      65             70             75             80
Ile Leu Cys Glu His Pro Arg Phe Arg Val Phe Val Asp Gly His Gln
      85             90             95
Leu Phe Asp Phe Tyr His Arg Ile Gln Thr Leu Ser Ala Ile Asp Thr
      100            105            110
Ile Lys Ile Asn Gly Asp Leu Gln Ile Thr Lys Leu Gly
      115            120            125

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&lt;210&gt; 2257

&lt;211&gt; 170

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2257

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Met Ile Ser Ile His Asn Glu Glu Glu Asn Ala Phe Ile Leu Asp Thr
 1             5             10             15
Leu Lys Lys Gln Trp Lys Gly Pro Asp Asp Ile Leu Leu Gly Met Phe
      20             25             30
Tyr Asp Thr Asp Asp Ala Ser Phe Lys Trp Phe Asp Asn Ser Asn Met
      35             40             45
Thr Phe Asp Lys Trp Thr Asp Gln Asp Asp Asp Glu Asp Leu Val Asp
      50             55             60
Thr Cys Ala Phe Leu His Ile Lys Thr Gly Glu Trp Lys Lys Gly Asn
      65             70             75             80
Cys Glu Val Ser Ser Val Glu Gly Thr Leu Cys Lys Thr Ala Ile Pro
      85             90             95
Tyr Lys Arg Lys Tyr Leu Ser Asp Asn His Ile Leu Ile Ser Ala Leu
      100            105            110
Val Ile Ala Ser Thr Val Ile Leu Thr Val Leu Gly Ala Ile Ile Trp
      115            120            125

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Phe Leu Tyr Lys Lys His Ser Asp Ser Arg Phe Thr Thr Val Phe Ser  
 130 135 140

Thr Ala Pro Gln Ser Pro Tyr Asn Glu Asp Cys Val Leu Val Val Gly  
 145 150 155 160

Glu Glu Asn Glu Tyr Pro Val Gln Phe Asp  
 165 170

<210> 2258

<211> 595

<212> PRT

<213> Homo sapiens

<400> 2258

Met Leu Leu Leu Leu Leu Leu Leu Pro Pro Leu Leu Cys Gly Arg Val  
 1 5 10 15

Gly Ala Lys Glu Gln Lys Asp Tyr Leu Leu Thr Met Gln Lys Ser Val  
 20 25 30

Thr Val Gln Glu Gly Leu Cys Val Ser Val Leu Cys Ser Phe Ser Tyr  
 35 40 45

Pro Gln Asn Gly Trp Thr Ala Ser Asp Pro Val His Gly Tyr Trp Phe  
 50 55 60

Arg Ala Gly Asp His Val Ser Arg Asn Ile Pro Val Ala Thr Asn Asn  
 65 70 75 80

Pro Ala Arg Ala Val Gln Glu Glu Thr Arg Asp Arg Phe His Leu Leu  
 85 90 95

Gly Asp Pro Gln Asn Lys Asp Cys Thr Leu Ser Ile Arg Asp Thr Arg  
 100 105 110

Glu Ser Asp Ala Gly Thr Tyr Val Phe Cys Val Glu Arg Gly Asn Met  
 115 120 125

Lys Trp Asn Tyr Lys Tyr Asp Gln Leu Ser Val Asn Val Thr Ala Ser  
 130 135 140

Gln Asp Leu Leu Ser Arg Tyr Arg Leu Glu Val Pro Glu Ser Val Thr  
 145 150 155 160

Val Gln Glu Gly Leu Cys Val Ser Val Pro Cys Ser Val Leu Tyr Pro  
 165 170 175

His Tyr Asn Trp Thr Ala Ser Ser Pro Val Tyr Gly Ser Trp Phe Lys  
 180 185 190

Glu Gly Ala Asp Ile Pro Trp Asp Ile Pro Val Ala Thr Asn Thr Pro  
 195 200 205

Ser Gly Lys Val Gln Glu Asp Thr His Gly Arg Phe Leu Leu Leu Gly  
 210 215 220

Asp Pro Gln Thr Asn Asn Cys Ser Leu Ser Ile Arg Asp Ala Arg Lys  
 225 230 235 240  
 Gly Asp Ser Gly Lys Tyr Tyr Phe Gln Val Glu Arg Gly Ser Arg Lys  
 245 250 255  
 Trp Asn Tyr Ile Tyr Asp Lys Leu Ser Val His Val Thr Ala Leu Thr  
 260 265 270  
 His Met Pro Thr Phe Ser Ile Pro Gly Thr Leu Glu Ser Gly His Pro  
 275 280 285  
 Arg Asn Leu Thr Cys Ser Val Pro Trp Ala Cys Glu Gln Gly Thr Pro  
 290 295 300  
 Pro Thr Ile Thr Trp Met Gly Ala Ser Val Ser Ser Leu Asp Pro Thr  
 305 310 315 320  
 Ile Thr Arg Ser Ser Met Leu Ser Leu Ile Pro Gln Pro Gln Asp His  
 325 330 335  
 Gly Thr Ser Leu Thr Cys Gln Val Thr Leu Pro Gly Ala Gly Val Thr  
 340 345 350  
 Met Thr Arg Ala Val Arg Leu Asn Ile Ser Tyr Pro Pro Gln Asn Leu  
 355 360 365  
 Thr Met Thr Val Phe Gln Gly Asp Gly Thr Ala Ser Thr Thr Leu Arg  
 370 375 380  
 Asn Gly Ser Ala Leu Ser Val Leu Glu Gly Gln Ser Leu His Leu Val  
 385 390 395 400  
 Cys Ala Val Asp Ser Asn Pro Pro Ala Arg Leu Ser Trp Thr Trp Gly  
 405 410 415  
 Ser Leu Thr Leu Ser Pro Ser Gln Ser Ser Asn Leu Gly Val Leu Glu  
 420 425 430  
 Leu Pro Arg Val His Val Lys Asp Glu Gly Glu Phe Thr Cys Arg Ala  
 435 440 445  
 Gln Asn Pro Leu Gly Ser Gln His Ile Ser Leu Ser Leu Ser Leu Gln  
 450 455 460  
 Asn Glu Tyr Thr Gly Lys Met Arg Pro Ile Ser Gly Val Thr Leu Gly  
 465 470 475 480  
 Ala Phe Gly Gly Ala Gly Ala Thr Ala Leu Val Phe Leu Tyr Phe Cys  
 485 490 495  
 Ile Ile Phe Val Val Val Arg Ser Cys Arg Lys Lys Ser Ala Arg Pro  
 500 505 510  
 Ala Val Gly Val Gly Asp Thr Gly Met Glu Asp Ala Asn Ala Val Arg  
 515 520 525  
 Gly Ser Ala Ser Gln Gly Pro Leu Ile Glu Ser Pro Ala Asp Asp Ser  
 530 535 540

Pro Pro His His Ala Pro Pro Ala Leu Ala Thr Pro Ser Pro Glu Glu  
545 550 555 560

Gly Glu Ile Gln Tyr Ala Ser Leu Ser Phe His Lys Ala Arg Pro Gln  
565 570 575

Tyr Pro Gln Glu Gln Glu Ala Ile Gly Tyr Glu Tyr Ser Glu Ile Asn  
580 585 590

Ile Pro Lys  
595

<210> 2259

<211> 274

<212> PRT

<213> Homo sapiens

<400> 2259

Met Ser Ser Asn Gly Ile Pro Glu Cys Tyr Ala Glu Glu Asp Glu Phe  
1 5 10 15

Ser Gly Leu Glu Thr Asp Thr Ala Val Pro Thr Glu Glu Ala Tyr Val  
20 25 30

Ile Tyr Asp Glu Asp Tyr Glu Phe Glu Thr Ser Arg Pro Pro Thr Thr  
35 40 45

Thr Glu Pro Ser Thr Thr Ala Thr Thr Pro Arg Val Ile Pro Glu Glu  
50 55 60

Gly Ala Ile Ser Ser Phe Pro Glu Glu Glu Phe Asp Leu Ala Gly Arg  
65 70 75 80

Lys Arg Phe Val Ala Pro Tyr Val Thr Tyr Leu Asn Lys Asp Pro Ser  
85 90 95

Ala Pro Cys Ser Leu Thr Asp Ala Leu Asp His Phe Gln Val Asp Ser  
100 105 110

Leu Asp Glu Ile Ile Pro Asn Asp Leu Lys Lys Ser Asp Leu Pro Pro  
115 120 125

Gln His Ala Pro Arg Asn Ile Thr Val Val Ala Val Glu Gly Cys His  
130 135 140

Ser Phe Val Ile Val Asp Trp Asp Lys Ala Thr Pro Gly Asp Val Val  
145 150 155 160

Thr Gly Tyr Leu Val Tyr Ser Ala Ser Tyr Glu Asp Phe Ile Arg Asn  
165 170 175

Lys Trp Ser Thr Gln Ala Ser Ser Val Thr His Leu Pro Ile Glu Asn  
180 185 190

Leu Lys Pro Asn Thr Arg Tyr Tyr Phe Lys Val Gln Ala Gln Asn Pro  
195 200 205

His Gly Tyr Gly Pro Ile Ser Pro Ser Val Ser Phe Val Thr Glu Ser

210                      215                      220  
 Asp Asn Pro Leu Leu Val Val Arg Pro Pro Gly Gly Glu Pro Ile Trp  
 225                      230                      235                      240  
 Ile Pro Phe Ala Phe Lys His Asp Pro Ser Tyr Thr Asp Cys His Gly  
                     245                      250                      255  
 Arg Gln Tyr Val Lys Arg Thr Leu Val Ser Lys Val Arg Gly Ser Trp  
                     260                      265                      270  
 Ser Leu

&lt;210&gt; 2260

&lt;211&gt; 468

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2260

Met Pro Ala Leu His Thr Leu Asn Leu Asp His Asn Leu Ile Asp Ala  
 1                      5                      10                      15  
 Leu Pro Pro Gly Ala Phe Ala Gln Leu Gly Gln Leu Ser Arg Leu Asp  
                     20                      25                      30  
 Leu Thr Ser Asn Arg Leu Ala Thr Leu Ala Pro Asp Pro Leu Phe Ser  
                     35                      40                      45  
 Arg Gly Arg Asp Ala Glu Ala Ser Pro Ala Pro Leu Val Leu Ser Phe  
                     50                      55                      60  
 Ser Gly Asn Pro Leu His Cys Asn Cys Glu Leu Leu Trp Leu Arg Arg  
 65                      70                      75                      80  
 Leu Ala Arg Pro Asp Asp Leu Glu Thr Cys Ala Ser Pro Pro Gly Leu  
                     85                      90                      95  
 Ala Gly Arg Tyr Phe Trp Ala Val Pro Glu Gly Glu Phe Ser Cys Glu  
                     100                      105                      110  
 Pro Pro Leu Ile Ala Arg His Thr Gln Arg Leu Trp Val Leu Glu Gly  
                     115                      120                      125  
 Gln Arg Ala Thr Leu Arg Cys Arg Ala Leu Gly Asp Pro Ala Pro Thr  
 130                      135                      140  
 Met His Trp Val Gly Pro Asp Asp Arg Leu Val Gly Asn Ser Ser Arg  
 145                      150                      155                      160  
 Ala Arg Ala Phe Pro Asn Gly Thr Leu Glu Ile Gly Ala Thr Gly Ala  
                     165                      170                      175  
 Gly Asp Ala Gly Gly Tyr Thr Cys Ile Ala Thr Asn Pro Ala Gly Glu  
                     180                      185                      190  
 Ala Thr Ala Arg Val Glu Leu Arg Val Leu Ala Leu Pro His Gly Gly  
                     195                      200                      205

Asn Ser Ser Ala Glu Gly Gly Arg Pro Gly Pro Ser Asp Ile Ala Ala  
 210 215 220  
 Ser Ala Arg Thr Ala Ala Glu Gly Glu Gly Thr Leu Glu Ser Glu Pro  
 225 230 235 240  
 Ala Val Gln Val Thr Glu Val Thr Ala Thr Ser Gly Leu Val Ser Trp  
 245 250 255  
 Gly Pro Gly Arg Pro Ala Asp Pro Val Trp Met Phe Gln Ile Gln Tyr  
 260 265 270  
 Asn Ser Ser Glu Asp Glu Thr Leu Ile Tyr Arg Ile Val Pro Ala Ser  
 275 280 285  
 Ser His His Phe Leu Leu Lys His Leu Val Pro Gly Ala Asp Tyr Asp  
 290 295 300  
 Leu Cys Leu Leu Ala Leu Ser Pro Ala Ala Gly Pro Ser Asp Leu Thr  
 305 310 315 320  
 Ala Thr Arg Leu Leu Gly Cys Ala His Phe Ser Thr Leu Pro Ala Ser  
 325 330 335  
 Pro Leu Cys His Ala Leu Gln Ala His Val Leu Gly Gly Thr Leu Thr  
 340 345 350  
 Val Ala Val Gly Gly Val Leu Val Ala Ala Leu Leu Val Phe Thr Val  
 355 360 365  
 Ala Leu Leu Val Arg Gly Arg Gly Ala Gly Asn Gly Arg Leu Pro Leu  
 370 375 380  
 Lys Leu Ser His Val Gln Ser Gln Thr Asn Gly Gly Pro Ser Pro Thr  
 385 390 395 400  
 Pro Lys Ala His Pro Pro Arg Ser Pro Pro Pro Arg Pro Gln Arg Ser  
 405 410 415  
 Cys Ser Leu Asp Leu Gly Asp Ala Gly Cys Tyr Gly Tyr Ala Arg Arg  
 420 425 430  
 Leu Gly Gly Ala Trp Ala Arg Arg Ser His Ser Val His Gly Gly Leu  
 435 440 445  
 Leu Gly Ala Gly Cys Arg Gly Val Gly Gly Ser Ala Glu Arg Leu Glu  
 450 455 460  
 Glu Ser Val Val  
 465

&lt;210&gt; 2261

&lt;211&gt; 86

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2261



Met Asn Arg Gly Asp Phe Leu Leu Ser Val Asn Gly Ala Ser Leu Ala  
 1 5 10 15  
 Gly Leu Ala His Gly Asn Val Leu Lys Val Leu His Gln Ala Gln Leu  
 20 25 30  
 His Lys Asp Ala Leu Val Val Ile Lys Lys Gly Met Asp Gln Pro Arg  
 35 40 45  
 Pro Ser Ala Arg Gln Glu Pro Pro Thr Ala Asn Gly Lys Gly Leu Leu  
 50 55 60  
 Ser Arg Lys Thr Ile Pro Leu Glu Pro Gly Ile Gly Lys Met Ile Ile  
 65 70 75 80  
 Ser Thr Thr Ser Arg Leu  
 85

<210> 2262  
 <211> 105  
 <212> PRT  
 <213> Homo sapiens

<400> 2262  
 Met Lys Gly Ser Arg Ala Leu Leu Leu Val Ala Leu Thr Leu Phe Cys  
 1 5 10 15  
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&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2265

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# **INDICATIONS RELATING TO A DEPOSITED MICROORGANISM OR OTHER BIOLOGICAL MATERIAL**

(PCT Rule 13bis)

**A.** The indications made below relate to the deposited microorganism or other biological material referred to in the description on page 243, line 24.

**B. IDENTIFICATION OF DEPOSIT**

Further deposits are identified on an additional sheet ☒

Name of depositary institution: American Type Culture Collection

Address of depositary institution (including postal code and country)  
10801 University Boulevard  
Manassas, Virginia 20110-2209  
United States of America

Date of deposit

11 April 2001

Accession Number

PTA-3276

**C. ADDITIONAL INDICATIONS** (leave blank if not applicable)

This information is continued on an additional sheet ☐

**D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE** (if the indications are not for all designated States)

Europe

In respect of those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which the application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC)

Continued on additional sheets

**E. SEPARATE FURNISHING OF INDICATIONS** (leave blank if not applicable)

The indications listed below will be submitted to the international Bureau later (specify the general nature of the indications e.g. "Accession Number of Deposit")

	For receiving Office use only		For International Bureau use only
<input type="checkbox"/> This sheet was received with the international application		<input checked="" type="checkbox"/> This sheet was received by the International Bureau on <div style="text-align: center; font-weight: bold;">15 MAY 2001</div> <div style="text-align: right;">( 15.05.01 )</div>	
Authorized officer		Authorized officer <i>P. Bécard</i>	

**ATCC Deposit No.: PTA-3276**

**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

**NORWAY**

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

**AUSTRALIA**

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

**FINLAND**

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.



**ATCC Deposit No.: PTA-3276**

### **DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

### **SWEDEN**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

### **NETHERLANDS**

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

# **INDICATIONS RELATING TO A DEPOSITED MICROORGANISM OR OTHER BIOLOGICAL MATERIAL**

(PCT Rule 13bis)

**A.** The indications made below relate to the deposited microorganism or other biological material referred to in the description on page 243, line 24.

**B. IDENTIFICATION OF DEPOSIT**

Further deposits are identified on an additional sheet ☒

Name of depositary institution: American Type Culture Collection

Address of depositary institution (including postal code and country)

10801 University Boulevard  
Manassas, Virginia 20110-2209  
United States of America

Date of deposit

11 April 2001

Accession Number

PTA-3277

**C. ADDITIONAL INDICATIONS** (leave blank if not applicable)

This information is continued on an additional sheet ☐

**D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE** (if the indications are not for all designated States)


Europe

In respect of those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which the application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC)

Continued on additional sheets

**E. SEPARATE FURNISHING OF INDICATIONS** (leave blank if not applicable)

The indications listed below will be submitted to the international Bureau later (specify the general nature of the indications e.g. "Accession Number of Deposit")

	For receiving Office use only			For International Bureau use only	
<input type="checkbox"/> This sheet was received with the international application			<input checked="" type="checkbox"/> This sheet was received by the International Bureau on <b>15 MAY 2001</b> (15.05.01)		
Authorized officer			Authorized officer 		

**ATCC Deposit No.: PTA-3277**

**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

**NORWAY**

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

**AUSTRALIA**

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

**FINLAND**

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

**ATCC Deposit No.: PTA-3277****DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

**SWEDEN**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

**NETHERLANDS**

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

# **INDICATIONS RELATING TO A DEPOSITED MICROORGANISM OR OTHER BIOLOGICAL MATERIAL**

(PCT Rule 13bis)

**A.** The indications made below relate to the deposited microorganism or other biological material referred to in the description on page 243, line 24.

**B. IDENTIFICATION OF DEPOSIT**

Further deposits are identified on an additional sheet ☒

Name of depositary institution: American Type Culture Collection

Address of depositary institution (including postal code and country)  
10801 University Boulevard  
Manassas, Virginia 20110-2209  
United States of America

Date of deposit

11 April 2001

Accession Number

PTA-3278

**C. ADDITIONAL INDICATIONS** (leave blank if not applicable)

This information is continued on an additional sheet ☐

**D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE** (if the indications are not for all designated States)

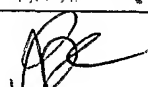
Europe

In respect of those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which the application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC).

Continued on additional sheets

**E. SEPARATE FURNISHING OF INDICATIONS** (leave blank if not applicable)

The indications listed below will be submitted to the international Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")

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			13 MAY 2001 (15.05.01)		
Authorized officer			Authorized officer 		

**ATCC Deposit No.: PTA-3278**

**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

**NORWAY**

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

**AUSTRALIA**

The applicant hereby gives notice that the furnishing of a sample of a microorganism shall only be effected prior to the grant of a patent, or prior to the lapsing, refusal or withdrawal of the application, to a person who is a skilled addressee without an interest in the invention (Regulation 3.25(3) of the Australian Patents Regulations).

**FINLAND**

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

**ATCC Deposit No.: PTA-3278**

**DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

**SWEDEN**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex Z of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

**NETHERLANDS**

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.

# **INDICATIONS RELATING TO A DEPOSITED MICROORGANISM OR OTHER BIOLOGICAL MATERIAL**

(PCT Rule 13bis)

**A.** The indications made below relate to the deposited microorganism or other biological material referred to in the description on page 243, line 24

**B. IDENTIFICATION OF DEPOSIT**

Further deposits are identified on an additional sheet ☒

Name of depositary institution: American Type Culture Collection

Address of depositary institution (including postal code and country)  
10801 University Boulevard  
Manassas, Virginia 20110-2209  
United States of America

Date of deposit

11 April 2001

Accession Number

PTA-3279

**C. ADDITIONAL INDICATIONS** (leave blank if not applicable)

This information is continued on an additional sheet ☐

**D. DESIGNATED STATES FOR WHICH INDICATIONS ARE MADE** (if the indications are not for all designated States)

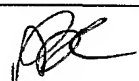
Europe

In respect of those designations in which a European Patent is sought a sample of the deposited microorganism will be made available until the publication of the mention of the grant of the European patent or until the date on which the application has been refused or withdrawn or is deemed to be withdrawn, only by the issue of such a sample to an expert nominated by the person requesting the sample (Rule 28(4) EPC).

Continued on additional sheets

**E. SEPARATE FURNISHING OF INDICATIONS** (leave blank if not applicable)

The indications listed below will be submitted to the International Bureau later (specify the general nature of the indications e.g., "Accession Number of Deposit")

	For receiving Office use only			For International Bureau use only	
<input type="checkbox"/> This sheet was received with the international application			<input checked="" type="checkbox"/> This sheet was received by the International Bureau on: <b>15 MAY 2001 (15.05.01)</b>		
Authorized officer			Authorized officer 		



**ATCC Deposit No.: PTA-3279**

**CANADA**

The applicant requests that, until either a Canadian patent has been issued on the basis of an application or the application has been refused, or is abandoned and no longer subject to reinstatement, or is withdrawn, the Commissioner of Patents only authorizes the furnishing of a sample of the deposited biological material referred to in the application to an independent expert nominated by the Commissioner, the applicant must, by a written statement, inform the International Bureau accordingly before completion of technical preparations for publication of the international application.

**NORWAY**

The applicant hereby requests that the application has been laid open to public inspection (by the Norwegian Patent Office), or has been finally decided upon by the Norwegian Patent Office without having been laid open inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Norwegian Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Norwegian Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on the list of recognized experts drawn up by the Norwegian Patent Office or any person approved by the applicant in the individual case.

**AUSTRALIA**

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**FINLAND**

The applicant hereby requests that, until the application has been laid open to public inspection (by the National Board of Patents and Regulations), or has been finally decided upon by the National Board of Patents and Registration without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art.

**UNITED KINGDOM**

The applicant hereby requests that the furnishing of a sample of a microorganism shall only be made available to an expert. The request to this effect must be filed by the applicant with the International Bureau before the completion of the technical preparations for the international publication of the application.

**ATCC Deposit No.: PTA-3279**

## **DENMARK**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Danish Patent Office), or has been finally decided upon by the Danish Patent office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the Danish Patent Office not later than at the time when the application is made available to the public under Sections 22 and 33(3) of the Danish Patents Act. If such a request has been filed by the applicant, any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Danish Patent Office or any person by the applicant in the individual case.

## **SWEDEN**

The applicant hereby requests that, until the application has been laid open to public inspection (by the Swedish Patent Office), or has been finally decided upon by the Swedish Patent Office without having been laid open to public inspection, the furnishing of a sample shall only be effected to an expert in the art. The request to this effect shall be filed by the applicant with the International Bureau before the expiration of 16 months from the priority date (preferably on the Form PCT/RO/134 reproduced in annex 2 of Volume I of the PCT Applicant's Guide). If such a request has been filed by the applicant any request made by a third party for the furnishing of a sample shall indicate the expert to be used. That expert may be any person entered on a list of recognized experts drawn up by the Swedish Patent Office or any person approved by a applicant in the individual case.

## **NETHERLANDS**

The applicant hereby requests that until the date of a grant of a Netherlands patent or until the date on which the application is refused or withdrawn or lapsed, the microorganism shall be made available as provided in the 31F(1) of the Patent Rules only by the issue of a sample to an expert. The request to this effect must be furnished by the applicant with the Netherlands Industrial Property Office before the date on which the application is made available to the public under Section 22C or Section 25 of the Patents Act of the Kingdom of the Netherlands, whichever of the two dates occurs earlier.